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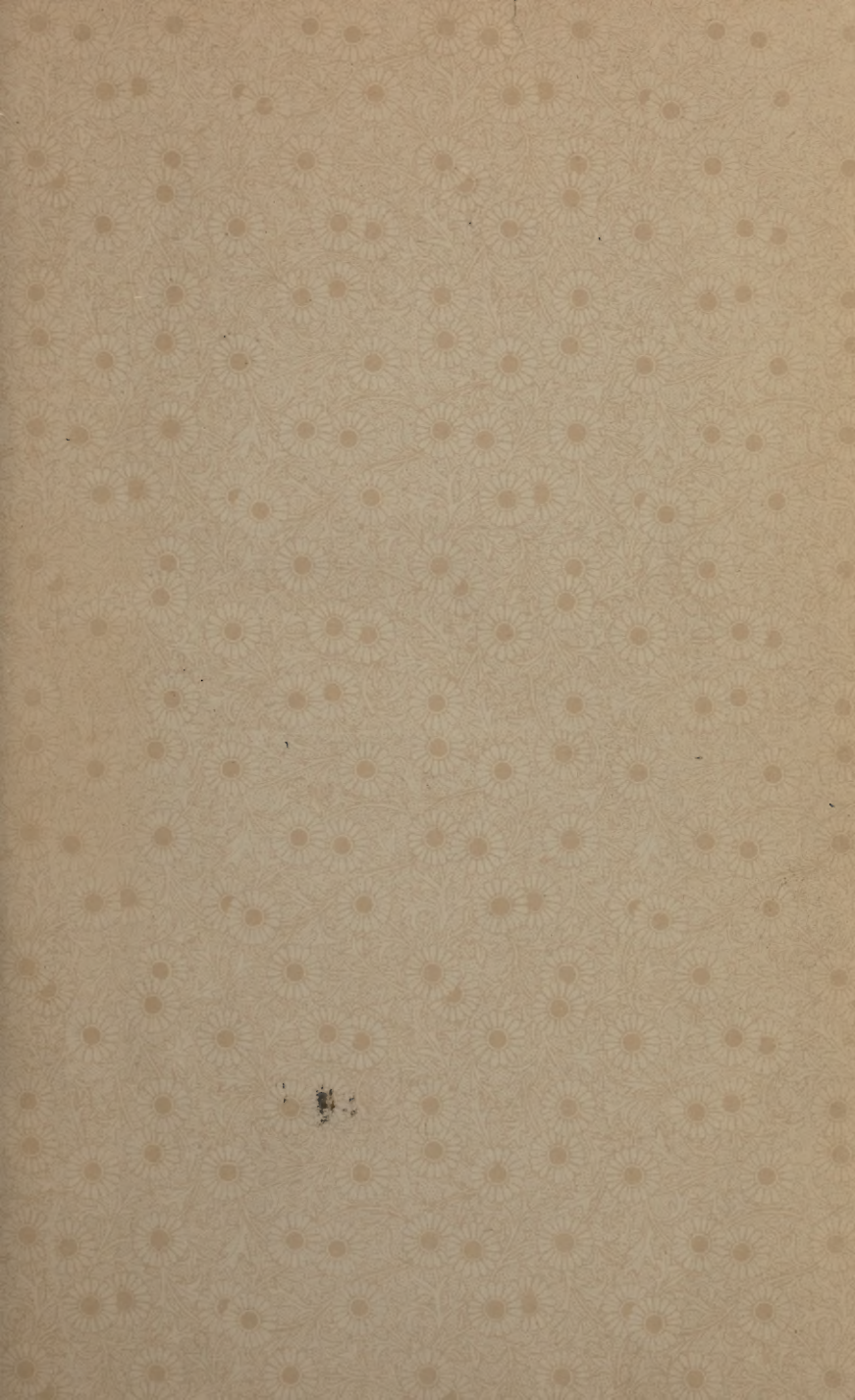
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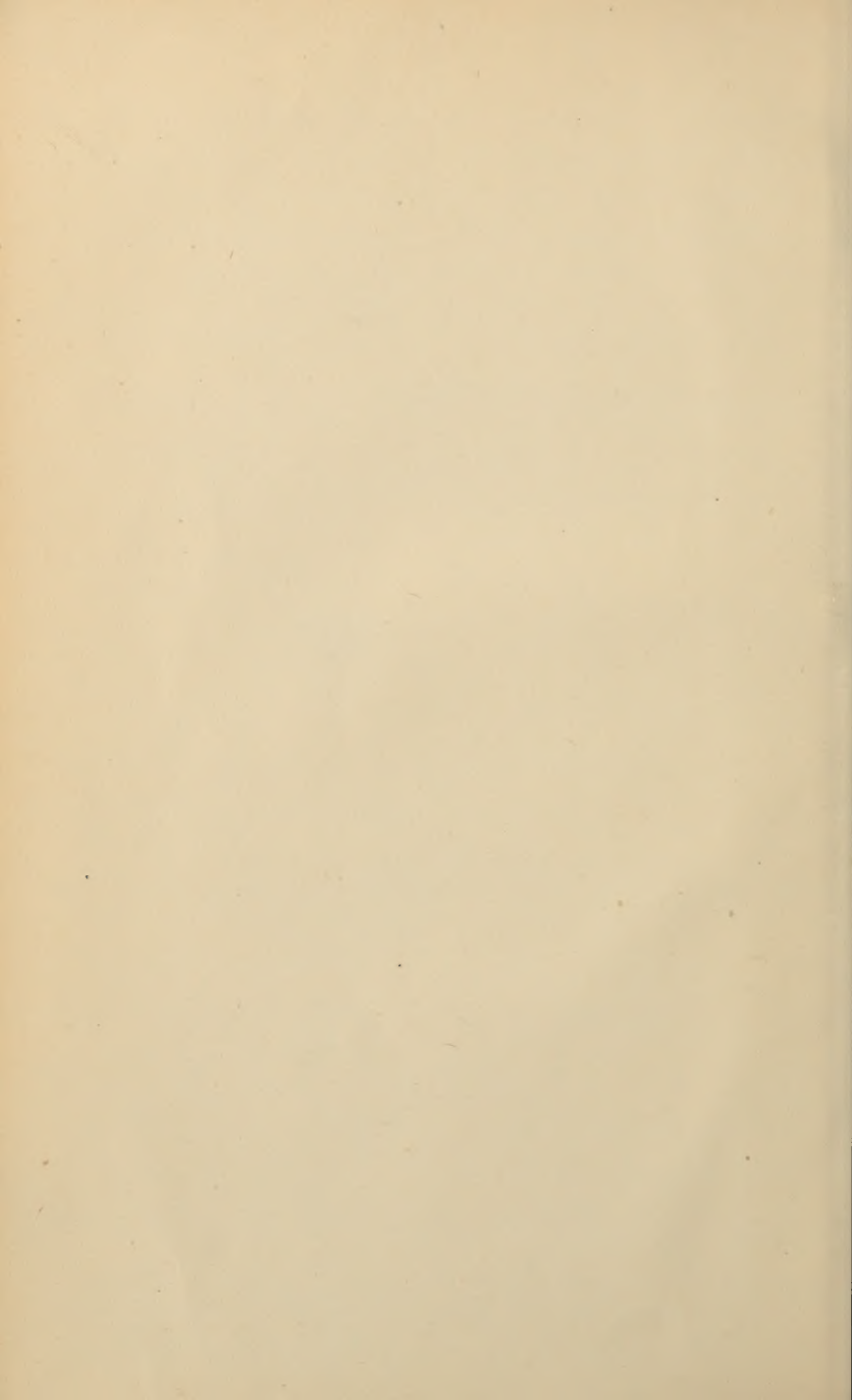
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TOILET MEDICINE:

A POPULAR SCIENTIFIC MANUAL

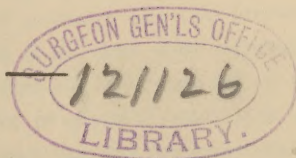
ON THE CORRECTION OF BODILY DEFECTS AND
THE IMPROVEMENT AND PRESERVATION OF
PERSONAL APPEARANCE;

TOGETHER WITH FORMULÆ FOR ALL THE SPECIAL
PREPARATIONS RECOMMENDED.

SECOND EDITION.

By EDWIN WOOTON, B.Sc.,

Senior Surgical Medallist, Charing Cross Hospital, etc., etc.



NEW YORK:

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TOLLET MICHIGAN

1888

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SECOND EDITION

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PREFACE TO THE FIRST EDITION.

I COMPLY with the custom requiring the infliction, by an author, of a preface on the unoffending reader; but I will be merciful, and, therefore, brief.

The purpose of these chapters is sufficiently explained in the introduction. Briefly, it is not to tell people how to "make up," but to assist them in the removal of certain bodily imperfections. As I have stated in the work, local mischief is very often but an indication of the body's general condition. For this reason, measures having a purely local action will, in such cases, fail in effecting a permanent cure. Here internal remedies are indicated; but such cases should be treated individually, according to their special requirements.

To prescribe a uniform dose of any preparation for mankind at large is to ignore the fact that all animals, including the *genus homo*, present, in their physiological functions, variations on the same type, and, while the same drug would produce the same class of action in any two human beings, under the same conditions, if the dose were adjusted to individual peculiarities, yet, were the latter rule set on one side, in many cases an excessive, in others a deficient or negative, result would follow. Besides this, the medicine itself may be improper, that is, unfit for any particular case, for the laity are generally unable to correctly diagnose their condition, and the taking of an unsuitable medicine may effect no inconsiderable amount of constitutional injury.

To external remedies which work by their absorption producing systemic action the same remarks apply; but, in those cases where local remedies are used to produce a purely local action, there need be no hesitation as to the use of general formulæ, for there is both less involvement of the general system, and the parts being immediately under the patient's observation, an excessive, deficient, or other unsatisfactory result can be detected with ease at an early period, and measures adopted accordingly.

EDWIN WOOTON.

PREFACE TO THE SECOND EDITION.

THE whole work has been carefully revised. Where necessary, such alterations have been made in the formulæ as may render them more efficacious.

EDWIN WOOTON.

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TOILET MEDICINE.

INTRODUCTION.

THE treatment of the visible imperfections of the body by local applications—mechanical appliances or voluntary efforts, together with or without internal medicine—forms the Science and Art of Surgery. But Surgery in its blindness and pride has devoted itself to the cure of only the more severe deformities and diseases, and has left a vast number of minor bodily afflictions uncared for.

Empiricism and Quackery have hence stepped in and occupied the place due by right to legitimate science; the perfumer and persons of Madame Rachel's type have been left masters of the situation, and the public to their mercy.

But such a mercy! Ignorant alike of the structure and functions of the body, ignorant of the physiological action of the drugs they use, and in some cases even ignorant of the chemical reactions occurring from the admixture of the latter, they have in too many cases ruined the appearance of their victims, and not seldom emptied their purses.

Moreover, the "Specialties" for the skin vended by these individuals, even when they work no absolute harm, produce the beauty of a barber's dummy in the user, whose artificial "get up" is manifest to every beholder, and who appears a standing libel on the human form divine.

Under the heading Toilet Medicine, I propose treating of the minor bodily afflictions to which I have alluded, together with

some commonly recognized surgical diseases. I do not believe in making every man his own doctor, and in the following pages only such directions will be given as can be safely carried out by a laity necessarily ignorant of medical science.

If the complaint concerned is not of deep nervous origin, it will in every case be removed by the fulfilment of the rules laid down; if, however, it be so, no harm will result from following the directions given, and the failure of a beneficial result should lead the patient to consult some one for treatment suited to the peculiarities of the case and idiosyncrasies of the individual.

To emphasize what I have said, the following chapters will be strictly Surgical. Now it is impossible to move one step in the treatment of surgical diseases by drugs without the use of medicaments, which, carried to excess, would be highly injurious.

Therefore, I say to the reader, follow the directions given, and no harm will result. Used otherwise, they will be either absolutely detrimental or utterly ineffectual. Fair play, which in this case signifies simply honesty of endeavor without self-deception, will be the reader's best policy.

Where necessary, the proper instructions for preparing the formulæ will be given: otherwise the reader will understand that the ingredients are to be simply mixed in the order of their sequence. Any pharmaceutical chemist will prepare the prescriptions which will appear in these pages, and as the more elaborate require some knowledge of pharmacy this will be the better plan.

CHAPTER I.

TREATMENT OF THE PERSON IN HEALTH.

The Hair.—This should be washed once or twice a week in tepid or cold water; it should afterwards be rubbed dry with a towel. To dry the hair before the fire is injurious to its vitality. Once or twice weekly some one of the washes I shall recommend for promoting the growth of the hair may be used. Combing and brushing are of great service in promoting the hair's nutrition; soft brushes are the best. Never use a broken, jagged comb, and then go round complaining that your hair is coming out by handfuls. A little—half to one teaspoonful—of scented oil may once a week be rubbed well into the hair and its roots, and the superfluous oil removed by the use of a towel. The daily use of oil, except in some rare cases of obstinate dry hair, is objectionable. If you want a head of thick hair, keep it cut as short as you conveniently can. Never should a woman allow her hair to grow to the level of her waist, for it will thin the hair and weaken the system. Of the moustache, beard, and whiskers, I may say that it is equally necessary to moderate their length, and that it will be found of advantage to occasionally apply a little oil and some stimulating lotion. Combing and brushing will also be of service. Directly hair shows any signs of thinning, shave it off or cut away as much as possible, according to its situation, and then put in force the measures I recommend under "Thinning of Hair."

Brush the eyebrows every day in their proper artistic line, and occasionally rub in a little olive oil and some one of the preparations to be presently mentioned. Once every month the tips of the eyelashes may, with advantage, be cut.

The Skin.—One of the great functions of the skin is to excrete certain materials from the blood; this is in the form of

perspiration, which, however, may be insensible. The amount of matter thus excreted is in direct proportion to certain influences, one being the temperature of the air or other medium in which the person is, and another the amount of exercise undergone by the individual. Persons, therefore, in a moderate temperature, who do not take exercise, retain within the blood the materials which it is the duty of the skin to excrete. The kidneys and other organs, to a certain extent, perform vicarious functions, and cast off the poisonous material. But a certain amount is of necessity offered again and again in the course of the circulation to the nervous centres, and other vital organs, as nutritive food, the result being the impairment of their functions and general ill health.

In India, and other hot climates, a great amount of exercise would, so far as the skin is concerned, be a work of supererogation. However little a person may exercise himself, the cutaneous glands will always cast off a certain amount of material; some of this collects in the ducts of the glands, the orifices of which are called the "pores"; some issues from the pores and dries on the surface of the skin; added to this are particles of fibre from the clothing, dust, etc., which, taken altogether, form a kind of paint, which, if left alone, most effectually blocks up the ducts of the glands, rendering their functions entirely nugatory. To prevent this, we have one great hygienic measure—bathing.

Bathing.—Hot baths are only of service as remedial measures in some diseases, and to thoroughly cleanse the skin when its pores have become clogged with dirt. For ordinary winter use, the water should not exceed 60 deg. F. If cold water can be borne it is far preferable. In the summer, cold baths should be taken. Sea water is better than fresh if it can be obtained. The Great Eastern Railway Company deliver sea water throughout the metropolis, at customer's own residences, for a trifling charge. For those living where such a convenience is not obtainable, one of the prepared "Sea salts" will be found of service.

The swimming, is, of course, preferable to the "hip" bath, or the conventional apparatus of the bath room; but, then,

some people cannot swim, and will not learn. Sea swimming is one of the most healthful exercises in the world, and any danger is minimized by the exercise of a slight amount of common sense. Thus persons should not venture out of their depth until they have learnt to swim. They should not swim straight out from the shore until they feel tired and then turn back, but only venture half the whole distance they can accomplish. This latter any swimmer can soon ascertain by "longshore" practice. Then, again, persons subject to cramp in the legs should learn to swim with the hands alone; it is also a good plan to keep oneself afloat with one hand, and in fact to be able, if necessity offers, to dispense as much as possible with the use of one's legs and arms, without running any great risk of drowning. The best time of day to bathe in the open sea must vary with the health and vigor of the individual. Strong healthy persons may bathe before breakfast; but many, especially invalids, will find this too fatiguing to be practised. The sun, too, is not very powerful in the early hours of the morning, and therefore the temperature of the water is much lower than later on in the forenoon. For invalids, the best time to bathe is perhaps two hours after breakfast. Sea bathing does not agree with every one. If the extremities become blue, the body chilled, and a headache supervenes, it is a certain indication that the bathing has had an injurious effect; but, then, this result may be due either to the bathing, *per se*, or to the great length of time during which the patient remained in the water. It cannot be too strongly insisted upon, that the derivation of a large amount of heat from the animal body, which always occurs in cold water bathing, must, if prolonged, be extremely deleterious to the general economy. For sea swimming, the best plan is to enter the water, duck or plunge, and then have a ten minutes' swim, leaving the water immediately it is finished. In no case should a non-swimmer remain standing about in the water for more than five minutes, nor should an active swimmer prolong his stay for more than fifteen minutes. It is useless to point to long time swimmers who remain in the water for hours together, for these are placed under circumstances en-

tirely different from those which affect the majority of bathers. If the ordinary swimmer will consent to go into training, he may in course of time hope either to be able to perform similar feats of endurance, or to be transferred from this to another portion of the universe.

It must be understood, that for a person to be able to remain swimming in cold water for any length of time without receiving any injury, there must be a gradual readjustment of the processes of conduction and oxidation as affecting the animal temperature. There is nothing, *per se*, in the increased oxidation in and conduction from the surface of the swimmer's body which is in itself antagonistic to the maintenance of life, only these processes, having been already, from the individual's birth, adjusted in a certain manner, any alteration of the latter, however gradual, must of necessity hinder the perfect working of the mechanism until the latter has become accustomed to its new conditions, until, to use metaphor, it has worn to itself a groove in which to run. But the mechanism very often refuses to become so "accustomed"; it is unable so to "work itself a groove"; the processes which maintain the being are unbalanced and disordered, and the person dies.

Wherever and whenever the bath is taken, the bather should afterwards rub himself dry with good towels. Bath towels are the best, and the skin should be rubbed until it is aglow.

Turkish Baths are serviceable in certain cases only: in those, for instance, where the individual undergoes some amount of bodily exertion or is resident in a hot climate, while at the same time the ordinary bathing facilities are restricted. In these cases a Turkish bath, say once a fortnight, will cleanse the skin from its secretions, and promote the bather's health. But when the ordinary bathing facilities are ample, Turkish baths are totally unnecessary.

The great objection to their frequent use is the fact, that as they not merely remove the matter already secreted, but promote fresh secretion, the blood is deprived of an amount of nutrient material which, under such circumstances, must in a short time effect a very serious drain upon the vascular fluid, and through this on the general strength of the individual.

The Shower Bath is of great advantage in certain cases of debility, but it should never be taken unless under direct medical advice, since in many instances the shock would be injurious rather than beneficial.

With reference to the question, How often should a person bathe every day, and when should the bath or baths be taken? it may at once be said that the answer to such a question must, in great measure, depend on the individual circumstances of the case.

The following table may serve as a general guide:—

SUMMER AND WARM WEATHER.

Tepid baths—fresh and salt water.

	Time in bath.	Frequency.	Period in day.
Healthy people....	Ten minutes....	Twice daily....	Before breakfast and retiring to rest.
Weak people.....	Ten minutes....	Once daily.....	Before breakfast.

Cold baths—fresh water.

Healthy people....	Ten minutes....	Twice daily....	Before breakfast and retiring to rest.
Weak people.....	Five minutes....	Once daily.....	Before breakfast.

Cold baths—salt water.

Healthy people....	Ten minutes....	Once daily.....	Before breakfast.
Weak people.....	Five minutes....	Once daily.....	Two hours after breakfast.

WINTER AND COLD WEATHER.

Tepid baths—fresh and salt water.

	Time in bath.	Frequency.	Period in day.
Healthy people....	Ten minutes....	Twice daily....	Before breakfast and retiring to rest.
Weak people.....	Ten minutes....	Once daily.....	Before breakfast.

Cold baths (fresh and salt water) to be taken in a properly warmed chamber.

Healthy people....	Ten minutes....	Once daily.....	Before breakfast.
Weak people.....	Five minutes....	Once daily.....	Before breakfast.

Dry Friction with soft towels after bathing is of great service

in promoting the circulation, cleansing the skin, and, if the bath has been a cold one, in preventing chills.

In cold weather, persons liable to be affected with chaps, etc., should, if possible, wear gloves night and day. Half the length of the fingers may be cut away, to allow of greater convenience in using the hands. If they bathe in cold water, the hands should afterwards be laved with tepid or warm water, and one of the emollient applications, of which I shall presently speak, should be applied.

Those who suffer from chapped or rough lips may *prevent* the occurrence of these conditions by the nightly use of the formulæ given in the sections concerning them.

The occurrence of corns may be prevented by wearing easy boots, made of kid or soft leather; there is no other *preventive* method.

I may mention, *en passant*, that those parasitic diseases which affect the skin are best *obviated* by baths of distilled water, and subsequent friction. Many arise from the wearing of linen which at the laundry is polluted by contact with clothes containing living germs. It will be possible to avoid these causes of disease.

The Nails.—These should never be bitten, for it renders them ragged and unsightly; *mais cela va sans dire*. Their length should extend just beyond the extremity of the bulbous part of the finger. They should be cut with scissors, and afterwards rounded off with pumice stone. If the nails are kept shorter than this, the skin of the digital extremities will become thickened and callous, and the nails will not be so easily kept clean. Dirt from under the nails should be removed with a blunt nail knife or similar instrument, and they should be cleaned with a nail brush. The skin around the nails may be kept smooth with pumice stone; it should never be allowed to become ragged. When however this condition exists, the ragged portions should be cut off with scissors, and pumice stone be afterwards used.

The Eyes.—However powerful the eyes of a person may be by nature, however expressive in the motions, real or assumed, of their owner, there are certain everyday circumstances which

will dim that sight, and render that lustrous, piercing, or pathetic eye bleary and weak. It is against these circumstances that the reader must guard, if he or she possess fine eyes, and would preserve them in their "pristine beauty." The first foe we have to combat is the wind; the second, which seldom affects us unless urged on by the first, is dust, including sand; the third is taxation of the powers of sight; and the fourth is the glare of the sun or of artificial light with the auxiliary form of the former—white cliffs, beach, roads, etc.

Now as to the first two foes—the wind and dust. All persons who face this, and whose eyes are easily irritated by it, should wear spectacles, the glasses being, unless otherwise indicated, perfectly plane—neither convex nor concave. Ladies always have some measure of protection in wearing the ordinary veil. This latter should be dark in color, and its meshes as close set as is consistent with the ability to see through it.

Taxation of the powers of sight. By this term I mean over use of the eyes, as by constant reading, sewing, etc. The individual concerned must fall back on his own common sense. The eyes, like every other organ of the body, require rest, and if this be not accorded them in sufficient amount, if they be compelled to work when they are physically weary, the result will be, as in every other case of overwork, loss of functional power. But there are some practices which more especially weary the eye: thus the use of the microscope, reading small print, fine sewing, etc., requiring as they do great accommodation of the eye, necessitate a strain on the eyeball which is coincident with the duration of the work performed. Moreover, as the eye becomes weaker in power, and is less able to perform its duties, the effort to effect accommodation is necessarily greater, and so weariness of the organ is the sooner produced.

The first indication, then, is not to overwork the eyes; the second is, if there is any defect of vision, to wear compensating glasses, which so far from injuring the sight will assist in its preservation, by relieving the eyeball from all strain.

In tropical countries, and during the months of summer in our own country, more especially, however, at the seaside,

the glare of the sun is apt to injure the sensitiveness of the retina, the result being dim or misty vision. The consequence of the unrestricted play of the sun's rays on the eyeball is often hastened and intensified by the refraction of the light, downwards from the white cliffs, and upwards from the beach. At Eastbourne and Dover, for instance, I have seen the cliff sides of such a dazzling, intense, and shimmering whiteness, that it pained the eye to regard them for more than a few seconds. So the beach and rays, by refracting the rays upwards are equally injurious to the vision. The retina cannot bear a great amount of light without its functional power being lessened. If any one doubts this, and supposes the results to be produced by the action of the heat alone, let him gaze with the naked eye for a few minutes at a strong electric lamp, such as they have in the British Museum Reading Room, and he will then find on removing his gaze from the light, and fixing it on the shelves around, that the vision has become dimmed. The amount of *heat* from the electric lamp which would reach the person in question would be absolutely trifling; the electric light is notoriously cold. To remedy by anticipation these evils, that is, to prevent their occurrence, tinted glasses should be worn, and perhaps the best color, both in appearance and for the convenience of the wearer, is *smoke*. Green, although a grateful color to the eye is no great protection against a strong glare of light, and the appearance of green glasses is most unsightly. The hat, too, should have a wide brim, and here green will be of service, for the brim may be lined on the inside with material of this color.

The glare of *artificial* light may injure the eyesight. Artificial light is not, *per se*, more injurious to vision than that emanating directly from the sun, but it is the circumstances which are found in conjunction with the former which cause injured vision to result more frequently from this than the latter. Thus many persons read, write, sew, etc., by the light of one or more candles, the glare from which falls directly on the retina; or possibly a gas or an oil lamp with a white globe may be used. Here the light is generally situated above the

person's head, and the eye, both from this cause and the diffusive power of the globe, is not so directly affected; still, even in these cases, the sight is generally, after a time, more or less injured.

The following Rules are drawn up to serve as a guide to students and others working by artificial light:

1st. If the work be carried on at a table, the cover should be green.

2d. If the light be given from a lamp or candle, it should be so covered with a shade as to prevent the glare from falling on the eye.

3d. It will, in addition, be advantageous to have the candle or lamp covered with a globe or chimney of tinted glass, which may be green, blue, or opaline.

4th. If gas is used it may be brought down by means of an india-rubber pipe to a lamp placed on the table, which may be arranged as before recommended.

5th. If this cannot well be done, the gas globes may be of tinted glass, and a person should wear a shade over the eyes, or should sit with his back to the light.

6th. If there is any defect of vision, compensating glasses should be worn, and they may be made of tinted glass.

Reading by firelight is also injurious on account of the glare, the quickly repeated dilatations and contractions of the iris, due to the changes in the intensity of the light, and the frequent alteration of the accommodation of the eye which the latter necessitates. Persons as cooks, compelled to work before a strong fire, should, if they experience any ocular inconvenience from the practice, wear smoked glasses.

Where the eyes are easily irritated by the wind or sun, etc., the daily use of one of the eyewashes to be recommended for weak eyes will be beneficial, as also a solution of camphor in rose water in the proportion of 1 to 8.

The Teeth, etc.—These should be well cleaned with a soft brush and powder every morning before breakfast. After dinner or other meal they may have the brush passed lightly round them for a few seconds, and the mouth should be washed out with a weak solution of permanganate of potash

or other antiseptic. To scrub the teeth, more especially if the brush be hard, several times daily, is injurious to their structure.

Hours of Rest.—All persons need rest and sleep, and in proportion to the amount of mental or physical exertion they undergo. It is impossible to give directions for each individual case, but it may be broadly stated that for brain workers, eight hours, and for physical laborers and those who do no work at all six hours sleep is required. Brain workers require absolute *mental* rest, which they can only procure in sleep. Physical laborers on the other hand require *bodily* or muscular rest; but their need of mental rest is small. The amount of rest required will be in direct proportion to the amount of work performed: thus, twelve hours' work and twelve hours' rest, deducting one hour for meals from each, will be a healthy balance; but then the rest must be genuine, still, as I have said, the amount of actual *sleep*, such as a mere physical laborer would require, is small.

As for those who never work at all, and who generally sleep for a longer period than those who do, I would give them the simple hint, that a great portion of their sleep is artificial. When a person is lying in bed after some eight hours' rest, the brain, thinking of nothing but the warm, indolent comfort of its owner's situation, from lack of stimulation of the intellectual and sensory ganglia ceases to exert its functional power, and a lazy, semi-conscious condition results. The heart's action being quiet from the rest of the whole system, the brain receives a decreased supply of blood, and from this cause, as well as from the lessened functional state alluded to, the sensory ganglia gradually creep into the unconscious state, and the intellectual ganglia to a greater or less degree follow suit.

This, however, is not healthy sleep: it is not rest, and the individual generally gets up far less refreshed than he would have been had he risen from his couch when he first awoke, and found himself refreshed by his night's slumbers.

Regularity in Defæcation.—When food has been taken by the mouth it passes into the stomach; there certain chemical

changes are carried on, and some of its fluid contents absorbed by the blood and lymph vessels of the organ. From the stomach the food passes into the small intestine; here other changes are carried on, and as it nears the end of the small intestine, the greater portion of the nutritive constituents have been absorbed, and a collection of mucous, epithelial *débris*, etc., added to the intestinal contents. So the latter pass on into the large intestine, in the upper part of which absorption is carried on, and onwards to the lower part of the colon and rectum.

During their passage the contents have lost by absorption all the material which was fit for the body's food, and now consist of cast-off mucous, epithelial *débris*, and the innutritious remains of the food eaten. If this be now expelled, well and good: but if suffered to remain, some of the poisonous mass is absorbed by the mucous walls of the intestine, passes into the circulation, is presented to the nerve centres and other vital organs for their nutrition (!), and so throws the whole system into disorder. Another fact to be considered is, that faeces, by its retention, is to a certain extent split up into certain gases, notably sulphuretted hydrogen, and these, being absorbed, also poison the system, and if they are not absorbed, produce great inconvenience.

It is calculated that solid food has its innutritious remnants ready for expulsion from the body about twenty-four hours after eating. This is, of course, an average only, as individual cases differ. Persons should therefore visit the closet once daily, and it is best to do so at the same hour.

Carriage, Deportment, Exercise, Muscular Development.—I shall dwell on these subjects in another place. Here I would merely state, that he who would be strong, healthy, and walk uprightly, in a physical, not a moral sense, must follow the directions given.

CHAPTER II.

AFFECTIONS OF THE SKIN.

Abrasions.—When the scarf skin is abraded, the best and simplest application is a single layer of flexible collodion. If much epidermis has been lost and the part bleeds freely, a paste of equal parts of glycerine and subnitrate of bismuth may be laid on and covered with collodion.

Attenuation, or as it is more commonly termed “skinniness,” is the opposite condition to obesity. It may result from insufficient supply of food, non-conversion of food into tissue, or excessive expenditure of vital material. Some thoroughly healthy people can never grow fat : the reason of this is either that their mental faculties are in a state of constant activity, or that they undergo a great deal of bodily exercise, either of which, by calling on the blood for material to replace that excreted, prevents the presence of superfluous nutritive substance in the system, and hence also its deposition as fat. Nervous people are not necessarily thin, but it may be laid down as a rule that persons of energetic temperament, with busily working brains, are not fat. It has been said that clever people are never fat. I cannot agree with this statement. Obesity may exist with a high intellect and the exercise of its faculties, for such exercise may be of a calm, even kind, as in novel writing, after many years’ practice. But the energetic, powerful, scheming, and reasoning brain can hardly belong to an obese person. The whole question, in fact, is a simple one, for intellectual work must of necessity reduce the fat of the body, but such reduction may be affected, not only by the calm, or, on the contrary, energetic manner in which the mental labor may be carried on, but also by hereditary tendency to obesity or the reverse, so that it may be said of an

intellectual fat person, if he were not intellectual he would be fatter. Not merely, however, will intellectual activity cause thinness, but purposeless nervous agitation and worry may be productive of the same result.

Treatment : This of course must depend on the cause. If it be due to preventable discharges they must be stopped. If to excessive brain work (intellectual), we must supply nerve food in the form of medicine, while the diet includes fat forming material. If to hereditary tendency the latter condition alone need be carried out. If the condition is due to nervous worry, sedatives, combined with tonics, must be taken.

A fat forming diet comprises soup, eggs, fat meat, pastry, saccharine material, port wine, stout, etc.

Internal medicines are always needed in these cases, but it is impossible to give formulæ which will suit all individuals, and patients will save themselves much trouble and inconvenience by consulting their medical adviser.

Bites and Stings.—BUG AND FLEA BITES will generally be remedied by a paste composed of equal parts of subnitrate of bismuth and glycerine. It occasionally happens that the bite of a bug, flea, or fly results in violent inflammation, passing on, perhaps, to mortification. This is due to the deposition by the animal of poisonous material in the flesh of the patient. In all such cases it is probable that the animal had been feeding on some putrefying organic substance. When we consider that the average size of a bacterium (the lowest visible form of life) is the one one-hundred-thousandth part of an inch, that it must of necessity originate from *something*, but that this *something* or germ is absolutely invisible to the most powerful microscope, we can well understand that thousands of such germs, with bacterial and other low organisms, may be deposited by the oral apparatus of the little animals of which we have spoken in the flesh of their victims. Having entered, they proceed to increase and multiply: hence the mischief.

Treatment : If the part bitten shows any tendency to become inflamed, rub into it dilute carbolic acid—strength 1 part in 20. A piece of lint soaked in the same should be placed over it, covered with oiled silk, and secured by strapping. At the

same time internal tonics will be required, and the bowels must be rendered active. The carbolic acid treatment is antiseptic. The acid being absorbed kills the germs and bacteria, and so prevents putrefaction; but it does not of necessity allay inflammation, since the mechanism of the latter having been set going, it may depend on causes other than the presence in the blood of septic material. If the inflammation appears to increase, the best method of treatment will be to take of bread crumbs so much as suffices to make a poultice for the part; then take a known quantity of hot water, and add to it one-twentieth of its volume of strong carbolic acid; to this add one drachm of tincture of opium; and with this liquid make the poultice.

DOG BITES.—These are not dangerous unless the animal is rabid or developing rabies at the time of biting. If it is sane at that period it will not affect the patient that it afterwards is attacked with rabies. Further, the bite of a rabid animal is an accomplished fact, and to kill the brute will not affect the chances of the patient being attacked with hydrophobia. The only legitimate grounds on which such an animal can be destroyed is to prevent its biting other brutes or persons.

Treatment: If the animal is suspected to be rabid, the part bitten must be excised by a surgeon. Hydrophobia is due to a *something* which is introduced into the blood of the patient, and which ultimately acts by throwing the whole nervous system into disorder; but what that *something* is neither chemical analysis nor the microscope has, up to the time I write, revealed to us. The only rational plan of treatment, therefore, is to have the bitten part excised as already directed, and then, by medicines and dietary, using the latter word in its fullest sense, to so strengthen the nervous system that it shall the more readily resist the attack of this hidden foe.

MOSQUITO AND GNAT BITES.—A lotion as in Formula 1 may be used,

Formula 1. { Carbolate of lime 10 grains.
 { Water 1 drachm.

The bites of mosquitoes may be treated as directed for those of the flea and gnat, etc. It is said that a weak solution—1

part in 50—of carbolic acid, used as a wash, will prevent their attacks.

SNAKE BITES.—The only snake whose bite is dangerous, which is met with in the British Isles, is the common viper.

Treatment : Nitric acid applied freely to the part, or the solid nitrate of silver worked thoroughly into it, will be a sufficient local remedy. The patient must support his system by tonic medicines. It may be a comfort to him to know that the bite of the British viper is very seldom fatal.

WASP AND BEE STINGS.—Examine the part with a lens, and the sting will probably be found. Remove it with tweezers. Rub in some dilute ammonia—one part of dilute liquor ammoniæ to three of water—and then apply ice. If ammonia is not at hand, chalk or carbonate of soda may be used, or any alkali. If ice cannot be had, a piece of lead, marble, or stone may be used.

Blisters.—When connected with burns, scalds, or chilblains, they need only the general treatment recommended under those headings. When arising from friction or other irritation, they should be pricked with a needle, and emptied of their contents by pressure; but the skin should on no account be broken.

The following preparation may then be gently rubbed into the part :—

Formula 2	{	Spermaceti.....	1 part.
		Olive oil.....	1 part.
		Subnitrate of bismuth.....	1 part.

The part *must* be protected from friction, or a disagreeable sore will probably result. This is especially necessary when the blister is situated on the heel. One method of protecting it in this situation is to first place over it a piece of court plaster, and over this a good thick piece of cotton wool, at least twice the size of the blister; this should be kept on by strips of adhesive strapping.

Another plan is to thickly spread a small piece of lint with the preparation recommended, to place this over the blister, and over this cotton wool, fastened as before directed. If the hands are chafed or blistered, the vesicles should be pricked,

and any of the cooling applications recommended under *Irritable Skin* may be employed. Some skins are abnormally irritable, and vesicate on very slight irritation. The best application for this condition is a lotion of rectified spirit applied twice daily ; this will harden the skin.

Boils.—A boil is an inflamed portion of the true skin. Its appearance is an indication of ill health. Even when the immediate cause is strong local irritation, it is doubtful whether the latter would produce a boil were it not that the individual is in that constitutional condition which predisposes to this form of eruption.

Treatment: Fresh air, a light nourishing dietary, abstinence from spirits, and the allowance of only a small quantity of wine daily, are the measures the patient must himself put in force. Of course the treatment must vary with the late mode of life of the individual. If the latter has been living sparsely, then a more nourishing diet is indicated, and three glasses of good port may be allowed per day. If, on the contrary, he has been accustomed to indulge in "the pleasures of the table," a thoroughly Lenten dietary for a week or two, with a more moderate *menu* for the future, will be his best line of treatment.

At the same time, internal medicines are plainly indicated. Locally, creasote ointment may be spread over the boil and covered with lint. If the inflammation is very great, poultices may be applied for a few hours ; when the matter points, a cut may be made across the boil with a lancet, or the "head" may be pricked and broken with a needle, when the matter should be pressed out. Indolent boils may be covered once daily with

Formula 3.	{	Glycerine.....	1 drachm.
		Extract of conium.....	1 drachm.
		Extract of belladonna.....	1 drachm.

made into an ointment with 1 oz. of the "ceratum resinæ." A chemist should prepare this. In very chronic cases the boil may be painted with iodine tincture once daily.

Bruises.—A bruise is the discoloration caused by the extravasation of blood from ruptured vessels, and is due either to a

blow or violent compression. In saying this, however, it must be understood that the bodies of many persons bruise readily from causes which would not affect those of others.

Treatment: Preventive—apply ice or Formula 18, or some cold object, as soon as possible after the injury. Pressure will also be of service. This method of treatment should be continued for at least two hours; then, if there be any discoloration, we must aim at procuring absorption of the extravasated material. With this end in view, iodide of potassium ointment may be used; its action is similar to that of crude iodine, and it has this advantage, that it does not stain the skin. The ointment may be used three times daily.

The appearance of a bruise may be somewhat disguised by first covering it with a paste composed of

Formula 4. { Prepared chalk.....1 part.
 { Glycerine.....1 part.

This should be gently worked into the part, and the excess wiped off. Over it now *one* layer of flexible collodion should be spread by means of a brush. This will make the part of a *white* color.

Burns and Scalds.—INJURIES FROM ACIDS.—Strong acids applied to the skin cause intense pain and destruction of the tissues with which the liquids come into contact, the extent of the injury varying, of course, with the amount of acid applied. When the injury has been caused by sulphuric, nitric, or hydrochloric acids, apply dilute ammonia, chalk, carbonate of magnesia, or the plaster from the ceiling stirred in water. After an hour or so apply carron oil (olive oil and lime water in equal parts) on lint. For carbolic acid: Apply olive oil.

INJURIES FROM CAUSTIC ALKALIES, as strong ammonia and potash. Apply a dilute acid, as vinegar; subsequently use:

Formula 5. { Olive oil.....1 part.
 { Carbonate of bismuth.....2 parts.
 { Spermaceti.....1 part.
 { White wax.....1 part.

SIMPLE BURNS AND SCALDS.—If there are vesicles they should be pricked with a needle. The part should then be covered with carron oil (equal parts of olive oil and lime

water), and lint soaked in the same should be applied over it. Externally to the lint a thick layer of cotton wool should be placed. After two days the carron oil may be discontinued, and the following substituted:

<i>Formula 6.</i>	Olive oil.....	1 part.
	Carbonate of bismuth.....	1 part.

or,

<i>Formula 7.</i>	Starch powder.....	1 part.
	Powdered chalk.....	1 part.
	Spermaceti.....	2 parts.
	Olive oil.....	1 part.

If carron oil (equal parts of olive oil and lime water) is not at hand, then olive oil, with equal parts of carbonate of soda, or powdered chalk, or powdered starch, or flour, will be of service. Or again, if olive oil is not at hand, the carbonate of soda may be dissolved in tepid water, and the part should be freely bathed with this, and then it should be thickly covered with a powder of the same. So also if the soda is not within reach, simple chalk, starch, or flour may be used as a powder.

Never apply cold to a burn or scald. Remember this: these injuries are not caused, as is popularly imagined, by an absorption of heat by the part concerned, which remains in the tissues, but by physical destruction of tissue and exhaustion of the local nervous apparatus, this latter result being due to the violent stimulation. Now life cannot be carried on without oxidation. Oxidation depends on blood supply and the power of the tissues to take up materials from the blood. This power of the tissues is due to nervous supply. By oxidation the tissues maintain their heat, and heat is an essential condition of their ability to perform their functions. Now grasp these simple facts, and understand that after a burn or scald there is nervous injury, lessened oxidation, lessened heat, and lessened tissue power. Therefore, I say, *Never apply cold*. Moreover, the part should be so well wrapped up as to preserve as high a temperature as possible. This, too, will relieve the pain.

Chaps.—The effect of cold is to diminish the calibre of the cutaneous blood-vessels, by producing contraction of their coats; hence there is a lessened supply of blood to the skin,

and *ergo*, a lessened nutrition, accompanied by a decreased secretion of the cutaneous glands—sebaceous and sudoriparous. In a moderate temperature these secretions are sufficient to keep the epidermis moist and supple. These two conditions—imperfect nutrition and absence of the softening secretion—render the epidermis less vital in character and less able to resist external forces. But the cold in addition applies the last straw by causing contraction, in a partly physical and partly physiological manner, of the epidermis, which consequently undergoes a solution of continuity in overstrained parts, and the result of this pre-eminently scientific process is a chap. Hence it follows that to prevent chaps the hands should be covered, and not exposed to the cold. The deficient secretions must be replaced by an outward application, which may be so prepared as to remove any possible redness of the skin.

The following formulæ will be of service:

<i>Formula 8.</i>	White wax.....	1 part.
	Borax.....	2 parts.
	Juice of bitter almonds.....	1 part.
	Oatmeal water.....	4 parts.
<i>Formula 9.</i>	Milk.....	.5 parts.
	Chalk.....	2 parts.
	Glycerin.....	1 part.
<i>Formula 10.</i>	Spermaceti.....	2 parts.
	White wax.....	1 part.
	Glycerine.....	1 part.
	Chalk.....	3 parts.
	Oatmeal water.....	6 parts.

Chilblains.—A chilblain is an inflammation of the true skin. There are three degrees: First, patches of red skin, generally swollen, and which itch; second, the skin of a purple color, and surrounded by blots or vesications; third, ulceration or sloughing.

Causes, etc. Chilblains are due to the local action of heat following cold. The skin of the toes and sides of the feet is generally attacked, and for two reasons. The parts are not kept well protected, and the circulation through them is naturally feeble; hence the blood-vessels are easily congested by cold; following this, the tissues contracting, expel the

blood, and the part is in color nearly white. This state is identical in kind, although not necessarily in degree, with the condition known as frost bite. The patient may not be conscious of anything amiss save that his feet are rather cold. The application of warmth relaxes the vessels, the blood urged on behind, as it always is, disturbs them; the vessels are now too weak to resist the pressure; they easily dilate, and the result is a congestion of the parts, going on to inflammation.

Treatment: Preventive—Keep the feet dry and warm; if cold, do not warm them at the fire or place them in hot water, but lave them with cold water, and then rub them with dry, cold towels. Chilblains most frequently attack those who are debilitated in health, although, of course, it is not confined to them; hence constitutional treatment is one of the most powerful measures.

Remedial—First degree: warm fomentations, and subsequent rubbing with liniments of turpentine, camphorated spirit, or

<i>Formula 11.</i>	{ Tincture of cantharidis.....	3 drachms.
	{ Soap liniment.....	9 drachms.

Second degree: fomentations, application of belladonna ointment; as the foot becomes less inflamed, the liniments recommended for first degree. Third degree: inflammation must be subdued by fomentations of—

<i>Formula 12.</i>	{ Decoction of poppy capsules.....	1 oz.
	{ Hot water.....	2 oz.

If there be much discharge of matter apply bread poultices, and when it ceases, or the inflammation subsides, use creasote ointment.

If a chilblain be much inflamed it is imperative that it be protected from friction of the boot. Thus the foot should either have absolute rest, or means should be taken to ensure the protection of the inflamed part, as by wrapping it in cotton wool or by wearing a slipper.

Corns.—A corn is an abnormal growth of the epidermis, which increases in two directions—outwardly, forming a callosity; inwardly, dipping down into the true skin. There are

two kinds, hard and soft. The hard generally form over some projecting point of bone; the soft form between the toes.

Causes: Irritation, by pressure or friction, as from wearing tight boots.

HARD CORNS.—Treatment: Radical—The epidermis forming the corn may be cut out; a surgeon or chiropodist should do this, the patient had better not attempt it himself. A method I have myself practised with success on a friend, is to shave off the external callosity; a central white disc will now appear; this is the core or part of the epidermis dipping down into the skin. This is carefully dug out. For the next few days a lotion of strong soda should be used. Instead of the soda, a fine stick of nitrate of silver may be thrust into the cavity, and worked into the tissues; this will cause some pain, but it will effectually remove the remaining epidermis. Hard corns may also be treated like warts, by the application of strong nitric or other acid. Having shaved the corn, cover all the skin around the white disc with a thick layer of lard, and place the acid on the core. After any radical operation for corns, the foot should have a few days' rest. If inflammation supervene, warm fomentations and poultices must be applied, and if matter form, it must be let out by a puncture or incision.

Palliative—The corn may be filed or shaved down, and soda solution used to remove as much epidermis as possible.

In both cases it will be subsequently advisable to wear a thick leather or felt plaster, having a hole cut to the size of the part from which the superabundant epidermis has been removed.

SOFT CORNS.—Treatment: Nitrate of silver is a good application. It may be used in the form of stick, or a solution of 1 drachm to the oz. of water may be rubbed into the corn with a piece of felt, cloth, or chamois leather. A second application should not be made until the eschar or scab has separated, or the cuticle has desquamated or separated in scales, when it may be renewed, provided the surface is not tender. If the latter condition prevail, the corn should be left alone, for two reasons; first, if the eschar be not very thick, nor the desquamation very deep, the tenderness will prove the corn to be

more superficial than penetrating; and next, if the eschar or desquamated cuticle be great in depth, the tenderness will show that enough epidermis has been removed.

A piece of cotton wool should be placed between or under the toes, as the case may be, so as to relieve the spot from friction or pressure. The padding may be kept in position by means of strips of adhesive plaster. If the corn is on the sole of the foot, it may be relieved from pressure by the measures recommended for the hard variety. The plaister, however, should be larger and thicker, and its edges should be so bevelled as to afford the part to which it is applied a very gradual support, increasing from the circumference to the centre. Another plan, when the corn is in this situation, is to have the boots rather larger than usual, and fitted with felt socks one quarter of an inch thick; the socks may be first applied to the feet, the region where the corn presses marked out on the sock, and a hole rather larger than the corn should then be cut at this spot; this will take off all pressure. The idea, like most others in these chapters, is my own. When corns are situated on the upper or outer surface of the toes, the boots should be made of such shape as to avoid pressure on the painful parts: the boots also should be of kid or soft leather. In the latter situations it will be well to protect the corns by means of felt plaister.

Dark Lines under the Eyes are due to congestion of the veins of the part. The *tendency* to this is very often hereditary, but it is never found except under one or more of the following circumstances; when the body is anæmic,* or calls for a greater supply of nourishment than is furnished, as in rapidly growing children; when the system is being drained by discharges of vital material, as in debauchery, piles, and the like; when the nervous centres are called on for an abnormal expenditure of their energy, and consequent discharge of the materials to which it is correlated, as in prolonged study, lack of sleep, exhausting diseases, etc. To place these under

* Anæmic—The condition of the body in *anæmia*. Anæmia is sometimes a deficiency of the total *quantity*, and at others an impairment or poverty of the chemical constitution of the blood.

one heading—When the supply and expenditure of the system are not up to the normal standard, and are not evenly balanced. This will include the many other conditions giving rise to this phenomenon, and which are so numerous that it is impossible to do more than allude to them in brief articles like these.

Treatment: This must, it is needless to remark, vary with the cause. If the latter be overwork, dissipation, etc., the manner of life must be changed. If congenital anæmia or debility be the cause, the blood and nervous system must be fed by proper medicines. In all cases, whether the causes are removable by voluntary efforts or not, a tonic treatment is indicated, and with this the remedying by specifics of any accompanying disorders of the viscera, etc.

Local treatment: The parts should be bathed frequently with cold water, and friction be afterwards used. A little turpentine liniment or weak ammonia—1 part of dilute ammonia to 4 of water—may be rubbed into the skin once daily, but care must be taken that it does not touch the eye.

Feet, Offensive.—This condition is caused by excessive sweating of the feet, and the sweat, being confined, does not evaporate, and so decomposes.

Treatment: The feet should be washed daily in cold water, and afterwards rubbed thoroughly dry; the water may contain half an ounce of powdered alum to the quart. Also at least once daily, especially after exercise, lave the feet with a solution of chlorinated lime, or

Formula 13. { Permanganate of potash.....80 grains.
 { Water..... 1 pint.

Also before putting on the socks or stockings, the feet should be thickly powdered, especially between the toes, with

Formula 14. { Chlorinated lime.....1 part.
 { Prepared chalk.....1 part.
 { Starch powder.....1 part.

The socks or stockings should be of thin flannel; these can easily be made.

Flabbiness of the Face.—Some people, who are in ill health, frequently exhibit a flabbiness of the cheeks and of the

region under the chin; the parts may tremble visibly when they walk or move. The condition frequently arises from the partial absorption of the fat, and the retention by the skin of nearly its original extent, so that the latter hangs loosely; or it may result from the deposition of a poorly organized fat, in which the strengthening bands of tissue ("areolar") are less numerous and firm in character than they should be. In any case, the primary cause is mal-nutrition, depending on defective nervous action.

Treatment: If the patient desire to lose his adipose condition, he must follow the directions given in the section on *Obesity*. As the patient has a low state of nervous power, he must take internal tonics, and they should be such as provide nerve *food*; at the same time, his dietary (in its full sense) should be such as to yield the system sufficient nourishment—to exercise all the muscles of the body; to cleanse the skin from all its impurities; to maintain regular daily evacuations; to give mind and body sufficient rest; to enable pure and not vitiated air to be taken into the blood; and to avoid the overloading of the blood with fatty and alcoholic material, and the stomach by a multiplicity of dishes.

Locally, a little iodide of potassium ointment may be nightly rubbed into the skin covering the fatty tissue. Dry friction may be previously employed. The skin may be tightened by a wash of a tablespoonful of alum to the pint of water.

Frost Bite.—A mild form of this is, as I have said, the initial stage of every chilblain. Any exposed part, as the nose, ears, feet, and hands, may be affected. If the cold be applied for many days, the parts may be so deprived of blood as to mortify.

Treatment of simple frost bite: The temperature must be very gradually raised, and the circulation restored by rubbing the part briskly with snow. Next, cold water may be used, it being rubbed well on to the skin with the hand. Then *cold* dry flannels should be substituted, and finally, the part should be simply wrapped in cotton wool. This operation should be carried on in a room without fire.

To apply heat to very cold or frost-bitten parts is a most

dangerous proceeding. Severe inflammation or even gangrene are common results.

Herpes Labialis, generally known as "breaking out," attacks the margins of the lips, and most frequently accompanies a cold in the head. It is too well known to need description.

Treatment:—

<i>Formula 15.</i>	Oxide of zinc	10 parts.
	Oxide of bismuth.....	20 parts.
	Powdered starch.....	20 parts.
	Oxide of iron.....	2 parts.
	Silica.....	20 parts.
	Oxide of aluminium.....	8 parts.
	Oxide of magnesium.....	10 parts.
	Powdered chalk.....	10 parts.

The above should be mixed into a fine powder, and then be made into a paste with an equal quantity of glycerine; this should be gently rubbed into and spread over the parts nightly.

Irritable Skin.—In some individuals the skin of the hands, feet, and other parts is abnormally irritable; blisters and tenderness result from slight friction or pressure. Heat produces a swollen red appearance of the parts, accompanied by an uneasy sensation of congestion and tingling. Cold results in numbness, chaps, chilblains, frost bite, etc. If the hands be affected, they appear red and coarse, and the sufferer is ashamed to appear in society without gloves.

Causes: The primary cause is an abnormal irritability of the nerves supplying the skin; they are easily so acted on by heat as to allow the arteries to dilate and become congested; they are so acted on by cold as to be paralyzed for the time. The arteries are contracted, and so the numbness of the nerves and the chapping, etc., are facilitated by the decreased supply of nutrient material; the veins are contracted, and so the passage of the blood in them is slowed, and hence the blueness of the the skin. When the capillaries are especially acted on, their contents are slowed in the same manner as in the veins, hence the raw beef appearance of the hands. A farther degree of cold will expel the capillary contents, and the hands pass from bluish-white to whitish-yellow, and are frost-bitten. When the action of temperature on the skin is thoroughly under-

stood, a definite scientific line of treatment is indicated. To briefly classify the processes:—

ACTION OF COLD.

1. Inhibition of vaso-motor nerves, and consequent increased blood supply.
2. Absorption of heat *from* the skin by the cold air or substance.
3. Direct contraction of arteries and capillaries, but not to such an extent as in the normal.
4. Absorption of heat from their contents.
5. Increase of cold produces contraction of veins, slowing of their contents, and consequent blueness.
6. Still further increase—great contraction of capillaries and small arteries—part becomes frost-bitten.
7. Decreased supply of blood causes (*a*) decreased function of nerves of secretion, hence numbness; also (*b*) lessened nutrition of skin, and stoppage of oily and sweat secretions.
8. Mechanical contraction of skin produces, after condition (*b*) is established, a solution of continuity—Chaps.

Treatment: Irritable skin must be protected as much as possible from the changes of temperature. In warm weather, lotions of salt and water, or of alum and water, followed by the formula recommended for *Redness*, should be used. If the parts are tingling or feel congested, a lotion of

Formula 16. { Hydrocyanic acid.....1 drachm.
 { Water1 oz.

may be used occasionally. Then cotton or silk gloves should be worn, and the hands may be bathed in milk containing a teaspoonful of alum to the pint. What we want most of all, to remedy in a physiological manner this condition, is a *very powerful* astringent, neutral in character, and which would not stain or injure the skin; but it unfortunately happens that no such drug is at present known. Perhaps the best substitutes for this desideratum, beside those mentioned, are—

Formula 17. { Sulphate of iron.....1 drachm.
 { Water.....1 oz.

Or, make a mixture of crushed ice and salt, both powdered very fine; place this in a muslin bag, suspended in a cool place over a vessel. When a sufficient quantity of liquid has dropped into the latter, add powdered alum—1 part to 4 of liquid. This is a cold astringent. It should be kept in a stone bottle, and in a cool place.

<i>Formula 18.</i>	{	Crushed ice.....	4 parts.
		Common salt	4 parts.
		Powdered alum.....	2 parts.

Sulphate of iron may be substituted for the alum; or,

<i>Formula 19.</i>	{	Common salt	1 part.
		Nitrate of potash	1 part.
		Hydrochlorate of ammonia.....	1 part.
		Water—sufficient to dissolve the powders.	

This, too, is a very cold application, and may be kept in the same manner as the preceding.

An easy method of cooling and softening the heated skin is to bathe it in milk in which ice has been dissolved, or the milk may be iced in a refrigerator; either of these, too, may have alum dissolved in them, as directed above.

The following is a simple astringent preparation:

<i>Formula 20.</i>	{	Tannin	1 drachm.
		Infusion of catechu.....	1 oz.
		Decoction of oak bark.....	1 oz.

It should, however, not be used to pale skins, as it leaves a temporary stain, but it will be found of service when the skin is of such a dark color that this becomes of no consequence.

ACTION OF HEAT.

1. Inhibition of the vaso-motor nerves, which ordinarily keep the arteries and capillaries contracted. Hence relaxation of arteries and capillaries.

2. Mechanical relaxation of arteries and capillaries, due to action of heat on their walls.

From 1 and 2 result arterial hyperæmia, or excess of blood, and consequent swelling redness.

3. From the increased supply of blood to nervous organs of sensation in the skin, irritability or tenderness ensues.

4. These conditions are increased by the chemical action of heat on the tissues, which rapidly form, rapidly disintegrate, and are in a state of unstable irritability.

5. Mechanical action of heat on veins relaxes them, hence their swelling.

6. Absorption of heat by the skin.

Treatment of irritable skin in winter. See CHAPS.

Itching of the Skin may be caused by scabies (which *see*); by neglecting proper ablutions, so that the pores become choked; by the irritability before mentioned; by a languid circulation through the capillaries; and by other conditions of the system which need not be here alluded to.

Treatment: For that arising from scabies and irritability, see those sections. For that arising from languid circulation, bathe the parts thoroughly in tepid water, and afterwards use friction to the skin. For that arising from neglect of proper ablutions common sense must dictate the remedy—bathing and friction to cleanse the epidermis. In the two latter states a Turkish bath will be found of great advantage.

Dilute hydrocyanic acid may be used as a lotion to allay itching in any particular region: but it is a powerful poison, and should never be applied to a broken or ulcerated surface save with the utmost caution, and under direct medical advice.

Looseness of the Skin.—When the skin itself appears loose or flabby, it is an indication of ill-health, and all the constitutional measures recommended under *Flabbiness of the Face* may be put in force. The parts may be bathed as often as convenient in cold water, friction used, and the alum lotion applied; tannin lotion may be used instead, if preferred, 1 drachm to the oz. of water.

Marks on the Skin.—DISCOLORATIONS.—Residents in hot climates who are of a dark complexion often find, after being in England for a few years, that the face skin becomes mottled in appearance, patches of light alternating with patches of dark color.

Treatment: Apply nightly to the dark patches:

<i>Formula 21.</i>	{	Emulsion of bitter almonds.....	1 pint.
		Perchloride of mercury	2½ grains.
		Sal ammoniac.....	1 drachm.

Or touch them with crystals of saltpetre moistened with water or Formulæ 14, 24, 24A, 25, 26.

FRECKLES may be treated as directed for mottled skin.

MOLES.—True nævi are often mistaken for these. A simple mole is a deposit of pigment in the substance of the skin.

Treatment:

<i>Formula 22.</i>	{ Calcium chloride	1 part.
	{ Water.....	2 parts.

To be rubbed in nightly. And

<i>Formula 23.</i>	{ Bitter almond emulsion.....	1 oz.
	{ Subnitrate of bismuth.....	1 oz.
	{ Calcium chloride.....	$\frac{1}{2}$ oz.
	{ Oatmeal water.....	$2\frac{1}{2}$ oz.

To be used every morning. Or, instead of the latter:

<i>Formula 24.</i>	{ Prepared chalk.....	1 part.
	{ Carbonate of soda.....	1 part.
	{ Calcium chloride.....	2 parts.
	{ Emulsion of bitter almonds.....	3 parts.
	{ Oatmeal water.....	3 parts.

<i>Formula 24A.</i>	{ Emulsion of pistachio nuts.....	1 part.
	{ Powdered borax.....	1 part.
	{ Calcium chloride.....	1 part.
	{ Milk.....	1 part.

The above formulæ will be often referred to in these chapters.

Pistachio nuts, which form one of the chief ingredients in many of the preparations sold at fancy prices, may be obtained from any good London fruiterer. An emulsion in Pharmacy generally signifies a milky substance produced by uniting oil and water by means of a mucilaginous or alkaline addition. But in making emulsions of nuts, since the vegetable oil is not separated from the other constituents, it is necessary only to remove the skin and to reduce the nuts to a pulp in the mortar, with the addition of a little milk or water, preferably the former, to assist the process. The pulp is then placed in a strong muslin or linen filter, and the fluid part (the emulsion), having been expressed, the hard residue may be thrown on one side.

SCARS.—If the scar be seated over a bony prominence, rub

in olive oil once daily, and try to move the skin backwards and forwards with the fingers, so as to break down any adhesions which may exist. Should the treatment be successful, or should no adhesions be there, use Formula 28 once daily. Stretch the margins away from each other, and fix them in this situation by means of adhesive plaster.

If the cicatrix rises above the level of the surrounding skin, use, besides the above,

<i>Formula 25.</i>	Iodide of sulphur.....	20 grains.
	Glycerine.....	1 oz.

SMALL-POX PITTING.—This may be *prevented* by covering the pustules with flexible collodion. To remove the pitting where it has occurred, follow these directions, which, together with the formulæ, are *original*. Wash the face every day for some minutes in hot water, then rub the face with a soft towel until it is aglow. Every morning use the following wash to the face:—

<i>Formula 26.</i>	Dilute spirit of ammonia.....	1 part.
	Glycerine.....	2 parts.
	Water.....	3 parts.

Once daily rub the following into the skin:—

<i>Formula 27.</i>	Subnitrate of bismuth.....	6 parts.
	Powdered silica.....	5 parts.
	Calcium fluoride.....	$\frac{1}{100}$ of a part.
	Prepared lard.....	7 parts.
	Spermaceti.....	5 parts.
	Olive oil.....	2 parts.

This should be freely rubbed over the whole surface of skin affected. Before retiring to rest, the *ridges* between the pits may be painted with a strong solution of iodide of potassium.

SUNBURN.—It is not advisable to remove this unless the skin is burnt red or irregularly.

In such cases, Formula No. 26 may be used once daily, the face being, of course, protected from the further action of the sun. During the summer months in exposed situations, as at the seaside, the skin may become not only sunburnt in the common sense of the word, but irritable and inflamed. The following used twice daily as a wash will prevent this.

<i>Formula 28.</i>	{	Milk.....	1 pint.
		Carbonate of soda.....	1 oz.
		Glycerine.....	1 oz.
		Powdered borax.....	$\frac{1}{2}$ oz.

or the following—

<i>Formula 29.</i>	{	Carbonate of soda.....	1 oz.
		Oatmeal water.....	$\frac{1}{2}$ pint.
		Milk.....	$\frac{1}{2}$ pint.

TATTOO MARKS.—These are best removed by the following plan. Wash the part thoroughly with common dilute acetic acid. Half an hour later use

<i>Formula 30.</i>	{	Caustic potash.....	4 grs.
		Water.....	1 oz.

after the lapse of another half hour, use

<i>Formula 31.</i>	{	Dilute hydrochloric acid.....	1 drachm.
		Water.....	1 ounce.

This should be repeated daily. Stronger solutions may be used, if they can be borne.

Nævus, commonly called “Mother’s Mark” or “Port Wine Mark,” is caused by the dilatation and increased growth of the small blood-vessels of the skin. Thus it may be arterial, venous, or capillary. In size, nævi vary from a pin’s head to nearly the whole extent of the face. No patient should himself operate on a nævus greater in circumference than a small pea. The simplest method of removal is by means of concentrated nitric or hydrochloric acid. A match or similar piece of wood should have one end bitten out into a form of brush: this should be dipped into the acid, and one large drop placed on the nævus, the skin around which should be thickly covered with lard. The acid should be brought into contact with the whole extent of the nævus. Then, over the scab or eschar formed, may be laid the following paste—

<i>Formula 32.</i>	{	Carbonate of bismuth.....	1 part.
		Glycerine.....	1 part.
		Extract of belladonna.....	1 part.
		Hydrocyanic acid.....	1 part.

The use of the acid causes a good deal of pain, but it is a very effectual method of removal.

If preferred, solid nitrate of silver or sulphate of copper may

be used; the latter should be thoroughly worked into the part. In both cases the paste before-mentioned should be afterwards applied.

A certain amount of inflammation is sure to follow any operation on a nævus, but when the latter is of small extent, this is seldom of a violent character, and the formula given will prove a sufficient remedy. After three days the paste may be gently washed off with warm water, and the following preparation gently, but effectually, rubbed into the eschar, over which a thickish layer should be afterwards placed, and the whole covered by a sheet of court plaister.

<i>Formula 32.</i>	{ Common cream.....	1 part.
	{ White wax.....	2 parts.
	{ Glycerine.....	1 part.
	{ Spermaceti.....	1 part.

The scab should now be allowed to fall off without further interference. If when it separates the surface is raw or tender, apply the last preparation, and cover with simple plaister for a week. Another method of removing nævi, is to keep them constantly moistened with very dilute acid solution, *e. g.*—1 oz. dilute nitric acid to 4 oz. water. Galvano-puncture may be tried. The conductors of the battery are to have a needle affixed to each of them by means of common iron wire. These needles should be inserted into the nævus; of course, not being allowed to touch each other. The object is to contract the vessels. If the affection be seated over a bony prominence, pressure, by means of a piece of lead and a bandage, may be tried; this too, is a tedious method of cure, but painless. If an operation be objected to, and the patient wishes to hide the deformity, the following will be found a harmless and effectual paint. If properly made it should dry like enamel and not crack.

<i>Formula 34.</i>	{ Wood charcoal.....	1 part.
	{ Carmine.....	1 part.
	{ Chalk.....	10 parts.
	{ Glycerine.....	3 parts.
	{ Flexible collodion.....	8 parts.
	{ Rectified spirits.....	2 parts.

The color of this may be varied by the relative amounts of

carbon, chalk, and carmine used. Another, and a simpler method is to powder the *nævus*, say of a white color, and then over it apply a layer of flexible collodion. The *nævus* should be moistened before the powder is applied. In both cases, simple tinted face powder may be afterwards used, both to the part affected and the skin surrounding it.

Obesity.—Two great evils arise from this condition. First: the impediment offered to the patient's movements by the excess of adipose tissue, and next, the deposition of fatty material in and around the vital organs, impairing their functions, and producing often a comparatively premature decease. It may be laid down as an almost invariable rule, that to be very fat is to be out of health. The patient may not feel any great disorder to exist. The condition, for instance, of a fatty heart may only occasionally make itself felt by flutterings and slight faintness; but, nevertheless, the mechanism is disordered.

Treatment: To understand the lines on which a rational treatment may be carried out, it is necessary to remember that fat is the normal covering of the body, it being always found as a layer of very variable thickness beneath the true skin. When more material is taken into the body than can be used for the maintenance of the tissues, some of it is deposited as fat, in the layer of which I have spoken: thus obesity is developed. Now this deposition of excessive material is simply an instance of natural economy: the fat is deposited until the tissues may require its use, when it will be absorbed into the system. As an example of this law, may be mentioned the hibernating animals. In these, during activity, the fat becomes developed to an enormous extent, and during the period of hibernation this is re-absorbed into the system, acting as food, to maintain the nutrition and heat of the body. Nevertheless, it must be understood that during such a state of sleep there is a lessened excretion of vital material, *e. g.*, albuminoids and phosphates, and consequently a decreased demand for their supply. Were this not so the animal must either wake up or die, since it is only in the connective tissue of fat that the essential ingredients of nerve and muscles are to be found: the greater part of the fat—its only portion—serving

simply for the maintenance of temperature in the process of respiration.

Knowing then why fat is deposited, it must be evident that the simplest and best way to effect its removal will be to use this fatty material as food, while we eat only such other substances as are absolutely required for the maintenance of life. Thus I should prescribe for a fatty patient—abstinence from all soups, broths, chocolate, butter, saccharine material, pastry, and any fatty or directly fat-forming material whatever. Meat may be taken, but it should be lean, and vegetables and fruit may be eaten. Wines must be light, and cold water will be the best drink. At the same time a scientifically prepared nerve tonic, one, that is, prescribed on genuine physiological grounds, and not like much of the trash sold under various names, worse than useless, should be taken daily. With this treatment the patient must adopt the old remedy of exercise. It need not be great at first. If he has been unaccustomed to use his legs for some time, although not absolutely incapable of doing so, he may commence by walking two hundred yards, either in his own house or out of doors, the latter being preferable. This practice should be repeated daily, being increased every time by fifty yards. Let him also exercise his muscles by the use of dumb bells, walking up and down stairs, etc., in fact, by taking all possible exercise. A tepid bath should be taken every day, and be followed by friction with a good bath towel.

But if the patient object to all this, he has another course open, viz., to prevent the transformation of fatty material eaten into the form of substance, into which it must enter before it can be converted into tissue. In other words, to prevent the saponification of fatty material.

The best agent for effecting this is the *Fucus vesiculosus*, and a preparation of it is commonly sold as a "patent" medicine, under the name of Allen's "Anti-fat."

Pallid Skin.—This is generally only a local indication of a general condition, and that condition is *debility*. There may be no apparent physical weakness, but, nevertheless, the system lacks that tone which is essential to the proper perform-

ance of those bodily functions, the integrity of which constitutes health. Anæmia is often present. The causes may, at their commencement, be: 1st, dissipation, study, or any excessive demand on the nervous centres; 2dly, loss of blood or other vital fluids: 3dly, insufficient supply of food or oxygen. In any case, the nervous centres become affected, and general impairment of the bodily health is the result.

Treatment: *All* cases of debility, no matter how caused, or how near death's door the patient may be, are perfectly curable; and this not by allopathy or homœopathy, but by the true sciences of physiology, physiological chemistry, and chemical physics.

As local measures for the treatment of pallid skin, cold bathing may be recommended, followed by friction with a soft towel. To the cheeks may be used the following:

<i>Formula 35.</i>	{	Dilute liquid ammonia.....	1 oz.
		Glycerine.....	2 oz.
		Water.....	4 oz.

This should be applied once daily for about three minutes, being well worked into the skin; afterwards a soft towel should be used for three or four minutes. If any irritation follow this process, the glycerine may be doubled in quantity.

Redness.—Red spots, with ray-like blood vessels seemingly issuing from their centre, are a species of *nævus*. Treatment as for the latter. Sometimes the cheeks present these *nævi* in great numbers; they are then very small, and frequently connected over the whole surface of the skin by red lines, which mark the course of dilated blood-vessels. This condition is most frequently seen in patients suffering from heart or lung disease, and is due to the impeded circulation and consequent congestion of the blood-vessels.

Treatment: The primary disease must be attended to by constitutional measures. Locally, the circulation may be promoted, and the tone of the vessels so raised as to enable them to contract on the contained blood, by cold bathing, friction with a soft towel, and the frequent use of *Formulæ 17 and 20*, etc.

Then, again, there may be a general capillary dilatation, congenital, or produced by exposure to burning heat, etc.

Treatment: Formulæ 17, 18, 19, and other astringents, followed by Formulæ 25, *et seq.*, or Formula 40, which will be given later on. A tablespoonful of common salt in a half-pint of water is a capital lotion. If the redness be on the hands, tight-fitting gloves should be worn. All irritation by friction, or exposure of the skin to heat or cold, should be avoided. The circulation should be promoted by washing the hands in tepid water, and dry friction with a soft towel.

The reader should understand that if the redness be due to exposure to heat the cold applications (Formulæ 18 and 19) are not to be used should the skin be hot, irritable, and tender. These formulæ are of service when the condition of redness has become chronic. To put the matter very plainly, they are not to be used to *cool* a heated skin, but to contract the vessels in one abnormally vascular.

Oatmeal water (see Formula 40, referred to above) is best prepared by boiling for fifteen minutes five ounces of oatmeal in one pint of water; the liquid part must then be strained off through some finely porous material. Next, the oatmeal itself must be wrapped in a bag of the same material, and so squeezed as to extract all the moisture possible from it. The boiled oatmeal itself may be of service if placed in gloves which are to be worn during the night. Bran may be used instead of oatmeal, but is much inferior.

Frequent exposure to inclement weather will often produce such contraction of the capillaries and small veins, that the blood, forced on behind by the action of the heart, and stopped in front by the impediment alluded to, forces its way through the least resisting vessels, dilating them to an abnormal extent. Other vessels refusing to dilate, chiefly small veins, have on their arterial or capillary side a mass of blood just rendered venous, and which dilates the walls in which it was contained. The result of all this is a skin bordering between crimson and purple, and frequently presenting outgrowths of vascular tissue.

Treatment: Remove the cause if possible. Let the face be

washed twice daily in *warm* water, and be afterwards well rubbed. If *nævi* have formed, destroy them. Dry friction with a soft towel should be freely practised, and then one of the astringent lotions already recommended may be used, especially to those parts where the vessels are seen to be dilated. (Formulæ 17 and 20.) The following will be of service if applied once daily:

<i>Formula 36.</i>	{ Chloride of lime.....	1 oz.
	{ Warm water	12 oz.

Redness may be due to plethora or full-bloodedness. The whole skin of the face is then of a reddish tint, and subject to flushing; the eyes are moist; the patient is very frequently subject to fits of profuse perspiration and to attacks of nose bleeding.

Treatment: This must be constitutional. Locally, the following cooling washes may be used as often as desired:

<i>Formula 37.</i>	{ Carbonate of soda.....	1 part.
	{ Prepared chalk.....	1 part.
	{ Borax.....	1 part.
	{ Glycerine.....	1 part.
	{ Oatmeal water	8 parts.

Once more, drunkards and gluttons very frequently suffer from enlargement or hypertrophy of the nose. The latter condition is commonly known as "cauliflower" or "carbuncle" nose. In addition, most of those who are much addicted to "the pleasures of the table" exhibit a physiognomy characterized by a full, plethoric, purplish color of skin; these individuals are commonly said to be bloated.

Treatment: Rich living must be forsworn, and a plain, nutritious dietary substituted. Formulæ 4, 8A, 9, 24, 24A, may be used to lessen the bloated appearance of the skin. Constitutional treatment will also be necessary. With regard to "cauliflower nose," the best treatment is the surgeon's knife: but if this is objected to, the patient must rely on internal remedies, with the following local application:

<i>Formula 38.</i>	{ Iodide of potassium.....	30 grains.
	{ Bromide of potassium.....	30 grains.
	{ Extract of belladonna.....	80 grains.
	{ Lard	1½ oz.

This may be applied nightly, being well rubbed into the skin of the enlarged parts. Frequent bathing in cold water and subsequent dry friction will assist in promoting absorption.

Beside the formulæ mentioned above (4, 8A, 9, 24, 24A), the unsightly appearance of the skin may be improved by the following:

Formula 39.	{	Borax.....	1 part.
		Prepared chalk.....	2 parts.
		Juice of bitter almonds.....	1 part.
		Oatmeal water.....	2 parts.

or,

Formula 40.	{	Glycerine.....	3 parts.
		Starch.....	1 part.
		Chalk.....	4 parts.
		Carbonate of soda.....	2 parts.
		Oatmeal water.....	8 parts.

These may be freely used.

Scabies, or the "Itch," is a disease due to an animal parasite, the *Acarus Scabiei*.

Symptoms: There is an eruption of vesicles or blebs, accompanied by intense itching, which is increased by warmth. The eruption generally commences between the fingers, and thence may spread over different parts of the body, with the exception of the face, which it does not attack.

Treatment: Rub in nightly

Formula 41.	{	Sublimed sulphur.....	1 oz.
		Lard.....	4 oz.,

made into an ointment.

Scalp, Tenderness of the.—This frequently arises from the practice of using very hot water to the head, as in some shampooing establishments. Again, it may be caused by the sudden change of temperature in shampooing from heat to cold. People should remember, that to draw a large quantity of blood to the surface (which hot water does), and then to drive it back on the larger arteries by the application of cold (which is just what occurs), is to run the risk of injuring not merely the skin, but the brain itself, which the process directly affects, and which cannot stand these sudden changes in its vascular supply. The water in shampooing should

commence at a moderate temperature, and be very gradually raised and lowered. Again, it may occur from the too liberal use of hair restorers, etc. In such case, common sense must dictate the line of treatment, viz., to leave them off for a time, and then to use them more sparingly. When the scalp is naturally tender, the head should be washed daily in cold water, and friction be used, care being taken not to abrade the surface. Afterwards,

Formula 42.	{	Rectified spirit	1 oz.
		Water.	3 oz.,

may be used as a wash.

The use of hard brushes may produce tenderness of the scalp, especially those worked by a machine. Now there is every disadvantage, and not one redeeming feature, in the use of hard brushes. All hair brushes should have long, soft bristles, and their use will promote the nutrition of scalp and hair, whereas, hard brushes injure both.

Scurf or Dandriff.—The scientific name of this is Pityriasis; it is characterized by the production of a white, brittle scurf skin, which sheds itself in small scales. The affection is not confined to the scalp, although it generally attacks parts covered by hair.

The treatment consists in daily washing of the head or other parts affected with

Formula 43.	{	Warm water.....	1 pint.
		Glycerine	½ oz.

This should be thoroughly rubbed over the skin; the dilute citrine ointment (sold by all chemists) may be used at night. A good preventive, and in mild cases, a curative wash is

Formula 44.	{	Water.....	1 pint.
		Borax.....	1 oz.

As a preventive, use once weekly; as a curative, twice daily.

It sometimes happens that the disease attacks parts uncovered by hair, and it has, in error, been termed Scorbutus, or the scorbutic complaint. *Dandriff, or Pityriasis simplex, is totally distinct from Scorbutus, or Scurvy.* The latter is brought about by abstinence from vegetable food, and nearly

always removed when the latter is supplied; and, moreover, it is a disease characterized by rottenness of the gums, foul ulcers, and wasting of the body.

When dandriff occurs on uncovered skin, the part must be constantly moistened with glycerine, and dilute citrine ointment should be used at night. Its occurrence is a manifestation of debility, and hence local measures may fail of affording any relief. In such case, special treatment will be necessary in order to effect what is, in nearly every case, possible, a complete cure. Before consulting a medical man, however, the patient may act as follows. Every night, each square inch of the affected skin is to have gently rubbed in a piece of the following ointment, the size and thickness of a sixpence:

Formula 45. $\left\{ \begin{array}{l} \text{Chrysophanic acid} \dots\dots\dots 1 \text{ drachm.} \\ \text{Lard} \dots\dots\dots 1 \text{ oz.} \end{array} \right.$

Great care should be taken to prevent the ointment coming into contact with the eye, as it is apt to cause violent inflammation of this organ.

Once every day the following is to be freely applied:

Formula 46. $\left\{ \begin{array}{l} \text{Carbonate of bismuth} \dots\dots\dots 1 \text{ oz.} \\ \text{Glycerine} \dots\dots\dots 1 \text{ oz.} \\ \text{Milk} \dots\dots\dots 2 \text{ oz.} \\ \text{Rectified spirit} \dots\dots\dots 1 \text{ oz.} \end{array} \right.$

This is to remain on for half an hour, and to be washed off with

Formula 47. $\left\{ \begin{array}{l} \text{Water} \dots\dots\dots 1 \text{ pint.} \\ \text{Glycerine} \dots\dots\dots 1 \text{ oz.} \end{array} \right.$

“Spotted Acne.”—This consists in the stoppage of the passages of certain minute glands by the secretion of the latter, and makes itself manifest by black spots which stud the skin, especially of the face. The blackness is caused by the dirt accumulating on the exterior of the core of matter.

Treatment: In persons subject to this complaint, the skin of the parts generally attacked must once daily be closely searched for the appearance of the spots. When found, the cores must be pressed out, and the part bathed with cold water. They are sometimes found in extraordinary numbers on the nose; in this situation they may be squeezed out with a

blunt, flat instrument, pressed tightly along the surface of the flesh. Lotions are often advertised to remove these "grubs," and the latter have been stated by the advertisers to be living organisms. All this is a delusion. The "grubs" are mere collections of *débris* and cast off cells, and they cannot be removed by other than mechanical means. What the said lotions really do, is (sometimes nothing at all) to whiten their external extremities, and so prevent their being noticed. A little glycerine or oil rubbed into the skin, or previous washing in hot water, will soften the secretion, and allow it to be more easily removed. The formation of the cores or grubs may be prevented by washing the face once daily in warm water, and afterwards pressing the towel, wrapped round the finger firmly, along the parts most frequently attacked. Any redness after this simple operation may be entirely obviated by using—

Formula 48. $\left\{ \begin{array}{l} \text{Glycerine.....1 part.} \\ \text{Prepared chalk.....1 part,} \end{array} \right.$

of which a very small portion will suffice.

ACNE VULGARIS is the scientific name given to an eruption of pimples on the face and other parts. The causes are constitutional, and therefore internal remedies will be needed. Locally, the tone of the parts may be improved, and the eruption hastened in its removal, by the following treatment. The pimples must be pricked, and the contents pressed out, and then a lotion of dilute acetic acid applied. If this does not effect a cure, then,

Formula 49. $\left\{ \begin{array}{l} \text{Iodide of sulphur.....10 grains.} \\ \text{Sublimed sulphur.....10 grains.} \\ \text{Dilute hydrocyanic acid.....10 minims.} \\ \text{Lard.....1 oz.,} \end{array} \right.$

made into an ointment, may be used nightly.

If the spots are very chronic and discolored, use to each, sparingly,

Formula 50. $\left\{ \begin{array}{l} \text{Emulsion of bitter almonds.....2 oz.} \\ \text{Oxymuriate of quicksilver..... $\frac{1}{4}$ grain.} \\ \text{Sal ammoniac.....6 minims.} \end{array} \right.$

Summer Bumps.—These are due to certain chemical ab-

normalities occurring in the tissues, as a consequence of increased heat of the body. The pathological processes are too long to be explained here, but increased oxidation and rapid cell-formation are the two chief factors.

Treatment: Apply ice, or a lotion of 1 drachm of chloride of ammonium to the ounce of water; or use Formulæ 18, 19.

If the part itches, apply dilute hydrocyanic acid (one of acid to four of water); but cold, if obtainable, is to be preferred, and will remove the itching equally well with the acid.

Some simple internal remedies are indicated when the patient is much attacked by summer bumps, and this is the only method of *preventing* their occurrence.

Sweating.—Sudoriferous, or sweat glands, are found over the whole surface of the body; they are imbedded in the tissue beneath the skin; they have ducts which open on the surface of the latter, and their mouths are commonly called pores. The function of the glands is to excrete the watery constituents of the blood, with some cast-off organic materials; they fulfil a perfectly natural and healthy office. Their amount of work is, however, directly in proportion to their blood supply; they are never idle, but in *cold weather*, or in persons who do not exert themselves, the secretion evaporates, and does not collect on the surface; this is *perspiration*. When the secretion is in excess, it collects on the skin, and is termed *sweat*; the laity, however, generally use the terms as synonymous.

Fulfilling, therefore, a perfectly normal function, to stop the latter would be to keep in the blood materials which should be removed; yet, inasmuch as the kidneys perform vicarious functions, the secretion, when excessive, may be regulated in a physiological manner, without danger to the patient. *Once a day*, not oftener, the following may be used for about two minutes as a wash:

Formula 51.	}	Liquor atropiæ.....	2 drachms.
		Water.....	1 pint.

The face and other parts may also be washed as often as desired in

<i>Formula 52.</i>	{ Alum	1 oz.
	{ Glycerine.....	1 oz.
	{ Water.....	10 oz.

Afterwards, any one of the following Formulæ may be used—Nos. 25, 26, etc.

Sycosis.—This is a parasitic disease, and due to the parasite of “Ringworm” attacking the hairy parts of the face, and causing inflammation of the hair follicles.

Symptoms: The skin around the base of each hair is converted into a pimple, which suppurates and discharges, forming a yellowish-brown crust.

Treatment: Remove the scabs by washing the parts in warm water, and then apply twice daily Formulæ 33.

Thickened or “Horny” Skin.—This is an increased growth of the epidermis, and is due to friction.

Treatment: Soak the part in water, and then rub it down with pumice stone; this should be repeated daily until the skin becomes very slightly tender, then leave it alone. Glycerine or oil may be rubbed into the parts with advantage. These applications render the epidermis more easily removable by the pumice stone. It must be remembered that the increased growth of the epidermis due to friction is a normal physiological process, and is a provision against the formation of the sore which would otherwise ensue. Hence, for an oarsman to rub down the epidermis as I have described, and to continue his exercise as before, would be to invite the formation of blisters and tender hands.

Thin Skin.—Sometimes the epidermis is so thin that blisters arise from the slightest irritation, and the patient is exposed to the discomforts I have dwelt on under Irritable Skin.

Treatment: Bathe the skin with

<i>Formula 53.</i>	{ Rectified spirit.....	2 parts.
	{ Glycerine.....	1 part.
	{ Water.....	2 parts.

This is to thicken and harden the epidermis. Any existing tenderness must be treated as before recommended.

Warts.—A wart is a hypertrophy or overgrowth of the

papillæ of the skin, and the epidermis covering them. There are four varieties: children's warts, venereal warts, senile warts, and common warts.

CHILDREN'S WARTS grow principally on the hands and face of children.

Treatment: Apply strong soda and water for a few days, and then paint them with aetherial tincture of tannin. Or, having covered the skin around the wart thickly with lard, apply over the surface of the growth one or two drops of strong hydrochloric or nitric acid: then keep the part covered up until the eschar or scab separates.

COMMON WARTS.—Treatment as for children's.

SENILE WARTS.—These occur on the skin of elderly persons; they are often the commencement of a form of cancer known as Epithelioma.

Treatment: Years of pain and perhaps a premature death may be avoided if the part is *thoroughly* destroyed with strong acid. If the patient is afraid to do it himself, let him go to a doctor.

If, after removal, these growths should show a tendency to return, they may be freely touched with nitrate of silver; or,

Formula 54.	{	Hydrochloric acid.....	1 drachm.
		Tincture of perchloride of iron.....	3 drachms

Three other applications may be mentioned—acid nitrate of mercury, creasote, and diacetate of lead lotion.

After warts have been removed, their situation is often marked by a more or less visible cicatrix; this, however, being far less unsightly than the wart itself. Hence, when these growths occur on the faces of children, especially girls, they may be left alone for a year or two, as they often disappear of themselves. Also it will be better, in these cases, to try the soda and tannin remedy already spoken of, before proceeding to severer measures. The situation of the growth, and the sex of the child, should always be prominent factors in an argument as to treatment.

Wrinkles.—Wrinkles caused by facial contractions cannot be removed while their cause continues in operation. Wither-

ing and puckering of skin, the result of years, may be remedied by

<i>Formula 55.</i>	{ Alum.....	1 drachm.
	{ Glycerine.....	1 oz.
	{ Water.....	1 pint,

to be used three times daily as a wash; or

<i>Formula 56.</i>	{ Glycerine	2 drachms.
	{ Tannin.....	1 drachm.
	{ Rectified spirit	1 drachm.
	{ Water	4 oz.,

to be used as a wash thrice daily. These washes are astringent, and they do no harm, whereas, some of the much vaunted lotions sold by the perfumers are most injurious if used for any length of time.

The skin should be frequently bathed in cold water, and rubbed vigorously with the towel afterwards. It should be remembered that the withering of the skin consequent on advancing years is one of the signs of the gradual decay of bodily vigor, however slow this may be, and while we may palliate the inconvenience by striving to give a tone to the parts by local applications, we must not overlook the fact referred to, that the root of the evil is the failing nervous system, whose power we must restore by proper remedies, and in so doing, both lengthen the patient's days and remove local indications of debility. As in these cases a consultation with a medical man should take place, I will here only refer the reader to the simple formulæ I have written above.

Skin Dyes.—**BROWN.**—One of the most innocent, and, at the same time, easily procurable dyes, is tincture of walnut, which is made by digesting walnut skins in rectified spirit. I, however, deprecate the dying of the skin at all, unless the patient is suffering from some imperfection, the appearance of which the process may serve to mitigate.

Soaps.—I do not purpose discussing the composition of the various soaps in general use, but to point out one or two dangers to be avoided. The common bar and cake soaps are

anything but soothing to the skin. Glycerine soap is a delusion and a snare, since the former cannot enter into composition with an alkali without losing its essential properties. Perhaps, taken all around, Pears' transparent soap is the best in the market. But the reader should understand that oatmeal is an excellent remover of dirt and grease from the skin. It may be substituted for soap with, in many cases, great advantage. It is emollient, and will assist in keeping the skin soft, and in preventing chaps, tenderness, etc.

The following are some of the "fancy" soaps in general use:—

Musk Soap.

Tallow soap.....	15 lbs.
Palm oil.....	10 lbs.
Clove powder.....	2¼ oz.
Pale roses.....	2¼ oz.
Gilleflower.....	2¼ oz.
Essence of bergamot.....	1¾ oz.
Essence of musk.....	1¾ oz.

Amb. rgris Soap.

Curd soap.....	7 lbs.
Oil of carraway.....	1¼ oz.
Essence of bergamot.....	1½ oz.
Essence of ambergris.....	1¼ oz.

Stains.—Nitrate of silver stains may be removed by rubbing them with a weak solution of sulphydrate of ammonium or strong solution of iodide of potassium.

Gunpowder stains may be removed by

<i>Formula 57.</i>	{	Olive oil.....	8 parts.
		Pure carbolic acid.....	1 part.

Fruit and ink stains should be treated by the application of a weak solution of oxalic acid, or very dilute sulphuric acid, or salts of lemon. In the first two cases the hands ought not to be touched with soap for some hours after the application.

CHAPTER III.

THE HAIR.

THAT of the head should be washed daily in pure water and rubbed dry with a soft towel. It should be thoroughly combed and brushed, since this promotes its nutrition. A small quantity of oil may, if preferred, be used—20 drops for a man, 60 for a woman; olive oil is the simplest and best. Curling irons are an abomination; they injure the hair. The hair may be curled in paper if very lank, and corkscrews, etc., are at a premium—but they are despicable by the side of the beautiful natural wave, which is given by the repeated application of the brush.

The eyebrows should be daily brushed in the artistic line of the brow. A few drops of olive oil may occasionally be applied with advantage.

The eyelashes should have their tips cut once a month, and be washed daily in pure water. If subject to entanglement, the affected hairs must be clipped and trained away from each other. The eyelashes also may occasionally be touched with a little olive oil.

To the hair of the face—the moustache, etc.—all that has been said about washing, combing, brushing, cutting, and occasionally oiling, applies with equal force.

THE HAIR OF THE HEAD.

The human skin consists of two portions: first, an outer, which is composed of several layers of squamous cells; secondly, an inner or deeper, which is not squamous, but fibroid, and very vascular in character. The first is termed the epidermis, the second the dermis, or true skin.

Take a watch key and press it on the surface of the arm or

other part, and you will have a depression lined by epidermis, externally to which is the true skin. At the bottom of the depression is a papilla. Suppose the epidermis covering this papilla to be prolonged upwards out of the depression, to whose sides nevertheless it adheres—suppose that as it nears the surface the character of its cells is altered, that they are squamous, but of a different color and density. Suppose, further, that this growth is prolonged out of the orifice and beyond the surface of the skin, and that in its centre is a canal containing oily and pigment matter, and this canal commences at the apex of the papilla. Suppose this, and you have a fair idea of the structure of a human hair. The hair grows from the cells which are formed by the papilla. This papilla is very vascular—from its blood-vessels the pigment is taken and deposited in the central canal of the hair, from which the hair cells take that which they require for the maintenance of color.

The orifices of certain minute sebaceous glands pour their oily contents into the cavity containing that part of the hair which is beneath the surface of the skin. Now baldness, whether congenital or otherwise, is the result of debility of these papillæ, and this debility may in turn depend on insufficient blood supply or deficient nervous influence. Loss of color, or its congenital absence, is due to deficiency of nervous supply to the papillæ, an influence which ordinarily enables the cells to extract the pigment from the blood. Hence it will be seen that the only purely physiological treatment for either condition is to stimulate and tonify the parts concerned in the formation of the hair cells. To *dye* the hair is to act by one of two methods—first, to introduce two foreign substances, which by their interaction produce a change of color, but which exert no tonifying influence whatever on the hair, but rather the contrary, and the gradual removal by time of whose elements will leave the hair as they found it; in other words whose action is *in* the hair but not *of* it; and next, to introduce a material which may act on the hair cells and pigment, but which, like the other, will be but transient in its effects.

With regard to promoting the growth of hair, it is doubtful whether hairs can be forced to develop where down did not

previously exist. To the naked eye a part may appear bald, but a lens will often show the presence of a multitude of very fine downy growths, each one of which is in structure identical with a hair, and may be trained until it attains the normal size. If once utterly bald places are ever covered by a growth of hair, the latter must have been preceded in its growth by down.

Deficient Hair.—When the hair has been scanty from birth, the apparently bald patch should be examined by a powerful lens for the presence of down. If this be detected, the young hairs which compose it will probably be forced to develop by the following treatment. The parts should be brushed with a baby's hair brush for five minutes three times daily. The following preparation should be used, being gently rubbed in for one minute after using the brush as above:—

<i>Formula 58.</i>	{	Tincture of cantharidis.....	1 oz.
		Rectified spirit.....	40 oz.
		Sublimed sulphur.....	1 oz.
		Glycerine.....	8 oz.

The application should not be wiped off. The part should also be gently bathed with warm water *before* the application, and dried with a soft towel, but it should on no account be rubbed. When the young hair is seen to be developing the lotion may be changed for the following:—

<i>Formula 59.</i>	{	Dilute liquid ammonia.....	$\frac{1}{2}$ oz.
		Rectified spirit.....	10 oz.
		Sublimed sulphur.....	1 oz.
		Tincture of cantharidis.....	$\frac{1}{2}$ oz.
		Glycerine.....	2 oz.
		Phosphate of lime.....	$\frac{1}{4}$ oz.
		Phosphate of magnesia.....	$\frac{1}{2}$ drachm.
		Phosphate of soda.....	1 drachm.

This is to be applied in the mannner directed for Formula 58. Should any irritation of the skin follow its use, it may be rendered inviscious by the addition of its bulk of glycerine and water in equal parts.

Dry, Stiff, or Obstinate Hair.—Men should use half a teaspoonful, women one teaspoonful of simple olive oil every morning.

The hair should be washed daily in

<i>Formula 60.</i>	Glycerine.....	5 parts.
	Water.....	50 parts.

It should be parted, if possible, in that direction in which it most easily falls. Should a piece of hair persist in growing in a wrong direction, it must be forcibly trained; it should on no account be cut off, but should be kept down with elastic, or simple cosmetique, applied from the roots outwards. In a few days it will probably be pliant enough. The comb and brush should be used freely.

Gloss.—The glossy appearance of the hair is due to the oily secretion of certain minute glands, and is generally found most marked in those whose heads get readily damp on exertion. Its absence may be treated by friction to the scalp, brushing and combing, and the use of one or more of the oils or washes to be presently mentioned.

Those who would be unhappy without elegant toilet requisites may use the following:—

To give a Gloss to the Hair.

<i>Formula 61.</i>	{ Castor oil.....	1 oz.
	{ Rectified spirit.....	1 pint.
	{ Tincture of cochineal.....	1 oz.

May be applied once daily.

HAIR OILS.

To make the Hair Curl.

<i>Formula 62.</i>	{ Olive oil.....	1 lb.
	{ Oil of origanum.....	1 drachm.
	{ Oil of rosemary.....	1¼ drachms.

Oil of Roses.

<i>Formula 63.</i>	{ Olive oil.....	1 pint.
	{ Otto of roses.....	16 drops.

Common Oil.

<i>Formula 64.</i>	{ Rectified spirit.....	1 pint.
	{ Sweet oil.....	3 pints.

Stimulating Pomatum.

<i>Formula 65.</i>	{ Almond oil.....	¼ lb.
	{ White wax.....	½ oz.
	{ Clarified lard.....	3 oz.
	{ Liquid ammonia.....	¼ oz.
	{ Oil of lavender.....	1 drachm.
	{ Oil of cloves.....	1 drachm.

HAIR WASHES.

Stimulating.

<i>Formula 66.</i>	Rose water.....	$\frac{1}{2}$ pint.
	Rectified spirit.....	$\frac{1}{2}$ pint.
	Tincture of Arnica.....	$\frac{1}{2}$ oz.
	Dilute liquid ammonia.....	2 drachms.

Bandoline for Hair.

<i>Formula 67.</i>	Quince seeds.....	1 part.
	Hot water.....	4 parts.

Eau de Cologne.

<i>Formula 68.</i>	Alcohol.....	2 quarts.
	Oil of neroli of orange.....	3 drachms.
	Oil of rosemary.....	$1\frac{1}{2}$ drachms.
	Oil of orange zest.....	1 oz.
	Oil of bergamot.....	3 drachms.

Hungary Water.

<i>Formula 69.</i>	Rectified spirit.....	1 gal.
	Oil of neroli of lemon.....	$1\frac{1}{2}$ oz.
	Oil of petit grain.....	$\frac{1}{2}$ oz.
	Oil of orange.....	$\frac{1}{2}$ oz.
	Oil of rosemary.....	$\frac{1}{2}$ oz.
	Oil of citron zest.....	$\frac{1}{4}$ oz.
	Oil of neroli of orange.....	$\frac{1}{8}$ oz.

"Eau de Bouquet."

<i>Formula 70.</i>	Rectified spirit.....	1 pint.
	Spirit of rosemary.....	$\frac{1}{2}$ oz.
	Essence of violets.....	$\frac{1}{2}$ oz.
	Essence of bergamot.....	$\frac{1}{2}$ drachm.
	Essence of jasmine.....	$\frac{1}{2}$ drachm.
	Oil of verbena.....	$\frac{1}{4}$ drachm.
	Oil of lavender.....	$\frac{1}{4}$ drachm.
	Rose water.....	$\frac{1}{4}$ pint.
	Orange flower water.....	$\frac{1}{2}$ oz.

"Eau sans Pareille."

<i>Formula 71.</i>	Bergamot essence.....	$\frac{1}{2}$ drachm.
	Essence of lemon.....	1 drachm.
	Essence of citron.....	$\frac{1}{2}$ drachm.
	Hungary water.....	2 oz.
	Rectified spirit.....	$1\frac{1}{2}$ pint.

Length of the Hair of the Head.—The longer the hair the more blood does it require for its maintenance, and the less in diameter do its individual components become. If the hair is kept very short it becomes coarse; if abnormally long, fine,

but weak, and it may become thinned. Moreover, for the reason given above, a great length of hair weakens the system of the wearer. Whenever there is partial baldness, or loss of color, in the hair, it should be cut as short as possible. When healthy, the hair of women should never descend beyond the mid-waist, that is, beyond the line dividing the space between the hip bone and the arm-pit into two equal portions. The hair of men should never exceed from one to three inches over the surface of the head.

Loss of Color in Hair.—Treatment: Formula No. 59 may be used for three minutes four times daily.

The hair should be repeatedly brushed with a soft brush; it may be bathed in warm water, and rubbed dry with a soft towel. Friction both to the skin and the hair itself is of great service. The hair must be kept cut as short as convenient. • It occasionally happens that the hair of a part is irregularly colored; the causes are generally of deep nervous origin; hence this condition is most frequently seen in persons subject to acute attacks of illness, with intervals of comparative health; in persons also of unstable temperament, in whom excitement and gaiety alternate with gloom. In some cases, however, it is due purely to local circumstances. The treatment, given above, should be directed to the lighter portions.

Persistent Damp Hair.—If the hair is persistently damp, a wash may be made with: Water 1 pint, table salt one teaspoonful. This may be used twice or thrice daily, and the hair thoroughly dried, combed, and brushed after its application. Its long continuance lightens the color of the hair.

Pimples around the Bases of Hairs (Sycosis).—This is an affection of the male sex, and attacks the face. The treatment will be found in the chapter on skin affections.

Straight and Lank Hair should be washed daily in simple water, thoroughly dried with a soft towel, and then the comb and brush must come into play. The hair should, to coin a word, be *waved* with these simple instruments: they should not be used in straight, but curved lines when it is desired that the hair of that part should be wavy. Curling washes, as they are termed, are utterly needless for this state, and are,

besides, not merely expensive, but sometimes injurious. The most innocuous and cheap are pure glycerine and the common yolk of an egg. The condition often arises from the too liberal use of hair washes or oils.

Hair Dyes.—Where, from some personal idiosyncrasy, the color of the hair has disappeared and cannot be restored, a dye may be considered necessary, the following will be of service:

Brown.

<i>Formula 72.</i>	{	Walnut skins beaten to a pulp.....	4 oz.
		Rectified spirit.....	16 oz.

The above is perfectly innocent in its character.

When iron and tannin act on each other, a black color results. This is the basis of the method by which ink is produced. If in order to dye the hair it were washed in ink, the result would be very ephemeral, for the outside of the hair would be chiefly affected by the application. If, however, the hair be repeatedly washed in a preparation of iron, so as to allow the liquid to be absorbed into the individual hairs, and the same process be subsequently repeated with a preparation of tannin, the effect will be that the chemical changes will occur in the substance of the hairs, and the resulting color will be of a more permanent character. It is no objection to this process to say that "ink" is formed in the tissue concerned. If the ink in question be innocuous and efficacious so far as the wished-for result is concerned, the mere wordy objection falls to the ground.

The hair then may be thoroughly washed with the following preparation twice daily for three days :

Black.

<i>Formula 73.</i>	{	Sulphate of iron.....	10 grains.
		Glycerine	1 oz.
		Water.....	1 pint.

After having used this, the hair should be dried and brushed. At the termination of the three days mentioned,

after using the above preparation, the one below should be applied on a small tooth comb, but it should not be allowed to come into contact with the skin, as a temporary stain may result:

<i>Formula 74.</i>	{ Gallic acid.....	4 grains.
	{ Tannic acid.....	4 grains.
	{ Water	1½ oz.

Subsequently, both formulæ may be used once daily, at an interval of one hour or so, until a black color is produced.

All preparations of lead and mercury are injurious if used for any length of time; they may, however, be legitimately used where some small portion of hair has, from personal idiosyncrasy, lost its color, which cannot be restored.

Brown.

<i>Formula 75.</i>	{ Litharge	1 part.
	{ Slaked lime	2 parts.
	{ Starch	2 parts.
	{ Milk—sufficient to make a paste.	

BLACK.—As above, but in place of milk use water.

The head must be covered after using these to prevent evaporation. Again:

Black.

<i>Formula 76.</i>	{ Slaked lime	1 parts.
	{ Carbonate of lead.....	1 part.
Mixed with water, and applied as the last.		

Again :

Black.

<i>Formula 77.</i>	{ Silver nitrate	11 drachms.
	{ Nitric acid.....	1 drachm.
	{ Water	1 pint.
	{ Sap green	3 drachms.
	{ Gum arabic	1½ drachms.

Again :

Black.

<i>Formula 78.</i>	{ Nitrate of silver	1 drachm.
	{ Distilled water—just so much as will dissolve it.	
Bottle, and keep in the dark.		

In another bottle place 2 drachms of gallic acid in a half-pint of hot water. After washing the hair use the gallic acid, and when it is nearly dry, the silver solution. The dye may

be lightened in color by adding more water to the silver solution.

GOLDEN HAIR.—The most harmless and effective of all preparations for producing this color is peroxide of hydrogen; it is sold under various high-sounding names, and sometimes at an exorbitant price.

THE EYEBROWS.

Deficiency of Color may be treated by one of the following formulæ—58, 59, 79.

Inseparate Eyebrows give a scowling expression to the face: the hairs for one-third of an inch between the two brows should be plucked out.

Irregular.—A line should be drawn with a pencil or pen from the inner to the outer angle of the orbit just above the normal edge of the eyebrow, and another immediately beneath the latter—the two meeting at a point externally. All hairs beyond this boundary should be plucked out with the tweezers.

Thin and Deficient Eyebrows.—The treatment recommended for the same states of the hair of the head is applicable to these conditions, but great care must be taken lest any of the lotion find its way into the eye. Moreover, the brows should be trained to grow within the lines above mentioned, and if the down external to these lines develop, it should be plucked out.

THE EYELASHES.

Deficient Color.—The following preparation may be carefully applied twice daily on the external aspect of the eyelids near the roots of the lashes:

<i>Formula 79.</i>	{	Sulphur sublimed.....	1 oz.
		Tincture of cantharidis.....	1 oz.
		Spermaceti.....	.8 oz.
		Glycerine.....	2 oz.

It must be distinctly understood that the deficient color depends on lack of pigment deposition in the hair substance, and that this is due to innutrition. While such a preparation as the above will tend, by stimulating the tissue and affording

materials for its nutrition, to bring about that condition which is most favorable for formation and deposition of pigment, it is very difficult to apply it so as to attain this result. It cannot be rubbed into the part, for this would cause great smarting and irritation of the eyes.

Dye for the Eyelashes.—BLACK.—Wash the lashes in Goulard water, and afterwards apply the following with a small brush:

<i>Formula 80.</i>	{ Sublimed sulphur.....	1 part.
	{ Lard	4 parts.
	{ Glycerine.....	2 parts.

Melt the lard and mix in the glycerine and sulphur. Let it stand until cool.

Ingrowth.—The lashes of either lid must be held transversely with a pair of tweezers or forceps and curled away from the eyeball; they may be previously moistened with pure glycerine or egg. This should be repeated daily.

Ophthalmia Tarsi.—This affection is recognized by redness of the edges of the lids, which have dry matter adhering round the roots of the lashes; the latter often wither and fall out or are stunted in growth; the eyes are weak, and the lids may be found stuck together after sleeping.

Treatment: These cases require internal medicine, and therefore the advice of a medical man is necessary. Locally, the remedies are, to cut the lashes off at the root, and to bathe the lids twice daily with warm water. If there be much inflammation, smear the edges of the lids with lard, at night, to prevent them sticking together. If not, dilute citrine ointment must be used in place of the lard; it may be applied with a brush. A shade should be worn over the eyes when out of doors, and tinted glasses should be used. Reading by the glare of a candle or gas is hurtful, but if the shade be worn, and the light be *above* the reader's head, the eyes may be used moderately without fear of evil. All causes of irritation must be avoided, *e. g.*, wind, dust, etc.

Short Lashes should first be cut of an even length, and then one of the preparations, 58, 59, 79, may be used.

FALLING OUT OF LASHES may be treated in a similar manner.

MISCELLANEOUS.

Hair in Ear Passage and Nostrils should not be removed, unless of great extent; it is placed as a guard to the entrance of foreign particles. If unsightly it may be bent out of the way.

Superfluous Hairs.—No drugs of any kind whatever should be used to remove these: such remedies, while destroying the hair root, must of necessity injure the skin. The proper method of removal is to pull each hair from its sheath by means of a pair of tweezers, and afterwards apply a little carbonate of bismuth, moistened with glycerine, to the part. They will not grow again if the operation be performed properly.

The Moustache, Beard, and Whiskers may be treated as directed for the hair of the head.

CHAPTER IV.

THE EYES, NOSE, AND EARS.

THE EYES.

Bilious Eyes.—Cause: Inaction of liver.

Treatment: Internal remedies, exercise, cold bathing; a nourishing, but not fatty, diet.

Bloodshot Eyes are best treated by one of the formulæ 80 to 86.

Dilatation of Pupil of.—The artificial dilatation of the pupil produced by belladonna is due to contraction of the radiating fibres of the iris. If the pupil be thus dilated for some time, the circular fibres lose their tone, and are unable to contract to their normal extent even after the withdrawal of the belladonna. The result is a largely dilated pupil, allowing a great amount of light to fall on the retina. The evils arising from this state are, that the means provided by Nature for regulating the amount of light to be admitted to the eye is rendered nugatory, and the retinal images are confused by the too violent stimulation which is given to the retinal surface; that the sensitiveness of the retina becomes thereby enfeebled, so that blindness is often the ultimate result.

To whatever part of the body belladonna be applied, dilatation of the pupil will result. Persons using this drug as an ointment, etc., should never be in a strong light without tinted glasses.

False Eyes.—Where vision has been lost and the eyeball is sunken, a false eye will be of service by keeping the lids in their proper positions, and by removing the ghastly appearance of the empty or nearly empty orbit.

Squinting.—This is generally accompanied by some weak-

ness of sight in one eye, which causes the patient to turn it aside in order to avoid the double vision which would ensue were he to employ two eyes of unequal powers in viewing one object. There are three varieties of squint—external, internal, and fixed eye. Sometimes both eyes squint, but this is rare. The *appearance* of this—which is so common, is (when one eye only is actually affected) caused as follows: The patient turns his head sideways to the object he wishes to view, so as to prevent the rays of light falling on the eye nearest the object. He looks at the latter with his further eye, while the near one is directed inwards; thus he has the appearance of possessing a “double” squint.

Causes: Contraction, congenital or otherwise, of one or more of the ocular muscles: paralysis of the opposing muscles. These conditions may be brought about by fevers, teething, fright, etc., or by cerebral disorders.

Treatment: At first internal remedies. If these fail, a surgical operation will, except in cases of paralysis, remove the mischief. If the squint is divergent, the patient may try to look inwards, and the best way (a very old one) of effecting this is to place a black patch on the nose and try to view it with the affected eye.

In cases of luscitas (fixed eye), while internal remedies are being taken, the patient should try to move the eye by its proper muscles.

Watery Eyes.—The eyes are tender, cannot bear a strong light, and there is an abundant secretion of tears.

Treatment: If acute, that is, coming on suddenly and from some injury due to dust, etc., they should be bathed in:

Formula 81. { Warm water.....1 part.
 { Poppy decoction.....1 part.

Chronic cases are best treated by astringents, as:

Formula 82. { Sulphate of zinc1½ grains.
 { Water.....1 oz.,

or,

Formula 83. { Alum.....2 grains.
 { Water.....1 oz.,

or,

Formula 84.	{	Sulphate of copper.....	1½ grains.
		Water.....	1 oz.,

or,

Formula 85.	{	Nitrate of silver.....	1 grain.
		Water.....	1 oz.,

or,

Formula 86.	{	Acetate of zinc.....	1½ grains.
		Water.....	1 oz.,

or,

Formula 87.	{	Diacetate of lead.....	11 grains.
		Water.....	1 oz.

The subsequent treatment of acute cases, after the inflammation has subsided, may be similar to that of the chronic.

Rectified spirit, 1 part, and water, 8 parts, may be used as a lotion to chronic cases.

Weak Eyesight.—Persons whose field of vision is cloudy, or who suffer from short or long sight, should wear glasses to suit their individual cases; by this means the eyeball is relieved of all constrained effort, and this is the condition most favorable to the maintenance of vision.

THE NOSE.

Modifying the Shape of the Nose.—When some years ago a celebrated London perfumer advertised a “nose machine,” the public laughed at what they considered a *prima facie* absurdity; but in good truth it is quite possible to alter the shape of one’s nasal organ, and that by a very simple appliance. All that is required is a piece of flexible wood (cork would do if it did not break so readily) 1½ in. long, 1 in. deep, and ¾ in. in thickness. This is to have a wedge-shaped piece cut out of it, slightly less in diameter than the thickness of the fleshy part of the nose at its centre. It will then be something like a clothes peg. When it is desired to use it, the sides of the peg must be gently separated, and the peg fastened on to the nose below the bridge. It should be applied at night, and kept on until the morning. Alexander Ross, the perfumer

alluded to, sells a metallic machine at 10s. 6d., but this is a very high price to charge, as any practical mechanic would make an equally effective one for one-third the sum. By using these appliances to the soft parts a pug may be converted into a Grecian, or if the bridge be rather prominent into an aquiline.

If the bridge be low and broad, pressure should be made on its sides. By this means the bridge will enlarge in front. As in all other cases of deformity the individual must be patient and persevering as well.

THE EARS.

Large Ears.—If these be trained to lie close to the side of the head their ugly appearance will not be so manifest. A broad elastic band or a webbing strap may be passed from the lower part of the back of the head obliquely across the ears to the top of the brow. This should be kept on for half-a-dozen hours daily.

The Ear Passage.—The skin lining the external meatus, or ear passage, contains ceruminous glands, which secrete a waxy substance. If this be not daily removed by washing it may accumulate and cause deafness. In such a case, the best way to get rid of it is to fill the passage with a mixture of equal parts of glycerine and tepid water, and let it remain there for some minutes; this will soften the wax. The passage should also be syringed out with tepid water. In using the syringe, the stream should not be directed in the axis of the passage, but against its walls. In the former case the tympanum might be injured. An "Aurelave," or ear sponge, fixed on a rod, will also be of service in removing the wax, and subsequently in keeping the passage clear.

CHAPTER V.

THE MOUTH AND TEETH.

THE MOUTH.

Chaps and Roughness of the Lips.—Persons subject to affections of this nature, whether occurring as the result of exposure to cold, or of a standing impaired nutrition of the mucous membrane, should use some simple emollient every night on retiring to rest; as for example—

<i>Formula 88.</i>	{	White wax	2 parts.
		Spermaceti	2 parts.
		Glycerine	2 parts.
		Olive oil	2 parts.

If almond oil be substituted for the olive, the preparation will possess a pleasanter odor.

Gum Boil may arise from the pressure of an abscess in the socket of a tooth generally decayed, or there may be no abscess in this situation, but inflammation and suppuration of the gum through the irritation caused by some affection of one or more teeth, or the boil may be simply due to constitutional causes, and have no connection with the teeth; in this case, it owes its peculiar characteristics merely to its situation.

Treatment: Fomentations. If a tooth near it be decayed, it should be extracted. When matter can be detected, the boil should be pricked or lanced.

Pale Lips.—This is generally an indication of debility, and more especially anæmia, it, therefore, is a mere symptom, and should be treated constitutionally. Locally, cayenne lozenges moistened and rubbed over the lips will dilate the vessels and deepen the color of the parts.

Smoker's Breath, etc.—Do not smoke bad tobacco, which leaves an abominable odor about the person, and contaminates

the breath almost beyond immediate remedying. The same may be said of bad cigars.

The following is an old formula for removing the odor of tobacco from the mouth after smoking; it is to be used as a wash:

<i>Formula 89.</i>	{ Calcium chloride.....	2 drachms.
	{ Water.....	1 oz.

Agitate for half an hour and filter. Then add

<i>Formula 90.</i>	{ Rectified spirit.....	1 oz.
	{ Rose water.....	$\frac{1}{2}$ oz.

For sore tongue, the simplest remedy is to wash out the mouth with

<i>Formula 91.</i>	{ Glycerine.....	1 part.
	{ Powdered chalk	1 part.
	{ Water.....	8 parts.

This will of course require to be shaken up before using.

THE TEETH.

Caries.—Caries or “decay” is the molecular death of a part; the tissue dies and is removed particle by particle. The causes of caries of the teeth are local and constitutional; the local causes are, breaking the teeth, breaking or scratching the enamel, or destroying it by acid tooth powders, etc.; the constitutional causes are, debility, either of the whole system or purely local and hereditary.

The question is often asked why is it that so many farm laborers who, as a rule, never use a tooth brush, possess such perfect “ivories?” Farm laborers, taken as a body, live simply, they breathe pure air, and their health, as a rule, is good; their digestive organs being in perfect order there is no decomposition and fermentation of food in the stomach, giving rise to foul gases and particles of putrescent matter, again, there is no slow partial disintegration of the digestive mucous membrane.

In persons, however, who are not very healthy, these conditions do exist to a greater or less extent; and the gases, particles of food and of mucous membrane, being acted on by the

saliva, form tartar, which is often swarming with the lowest forms of life, due to the putrefaction of the organic material of which I have been speaking.

Tartar, however, is not the direct cause of decay, but as it is found in those persons who are more or less debilitated, and whose digestive functions are impaired, the decay which occurs from failure of nervous nutrition, when once it has been set up, is promoted by the septic and chemical influences brought to bear on the affected tooth.

The presence of particles of food between the teeth, in the same manner acts, not by causing decay, but by facilitating the process when once it has been set up.

Treatment: Those subject to caries of the teeth, and, indeed, all persons, but these more especially, should use an antiseptic mouth wash. There is nothing better than Condyl's Fluid; a soft brush with the hairs set widely apart, so as to penetrate between the teeth, may also be used to bring the fluid into their interstices. The teeth should be cleaned in this manner after every meal; every morning they should be brushed with one of the tooth powders I shall presently mention. If caries has been set up, the tooth should be stopped and the above treatment still carried out. If the patient is debilitated or out of order in any way, then the general health must be attended to, or local remedies will be nearly useless.

Should teeth be extracted? If a tooth be past stopping it may yet form a very useful stump. It should not be extracted unless its presence gives rise to great irritation, accompanied by enlargement of the neighboring lymphatic glands, etc. If it is desired to wear false teeth, a set may easily be fitted to the jaws without extracting the stumps, if the latter be filed down level with the gums. If a decayed tooth has a sharp edge, the latter should be removed by the file, since it may give rise to troublesome sores on the tongue and inside of the cheek or lips.

Discoloration.—Sometimes the deposit of tartar is so slight, that the teeth appear stained only, and they may be actually stained from tobacco, whether this be smoked or chewed; certain herbs and fruits also stain the teeth.

Treatment: Cleaning with tooth powder.

Tartar.—The causes of tartar have been already given.

Treatment: If the tartar be thick, it may be scaled off by the dentist. The domestic treatment consists in using the following formula as directed.

<i>Formula 92.</i>	{ Powdered wood charcoal.....1 part. { Dilute nitric acid.....1 part.
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The finger, covered with a piece of kid or leather, or a piece of pointed wood covered with lint, should be dipped in the paste and then rubbed all over the tartar. This will remove the greater part of the deposit; a little powdered chalk may afterwards be rubbed over the teeth; care should be taken not to allow the paste to touch the gums. The subsequent treatment will be the same as when the tartar has been but slightly deposited, viz., the daily use of one of the tooth powders to be presently recommended. When the tartar has been deposited on the inner side of the teeth, a peculiar form of brush will be required to remove it. Such brushes are commonly sold in the shops.

Toothache.—A tooth is a living structure, as much so as any part of the body; it has, indeed, a freer nervous supply than the majority of tissues. Its interior contains a little nervous mass known as the tooth pulp. The substance of the tooth itself, called *dentine*, is composed of little tubules, containing the nutrient matter, secreted under the influence of the pulp: from the pulp a fine nervous cord proceeds through the fang to the nerve cords contained in the substance of the jaw. Thus a tooth may “take cold,” and its soft parts be inflamed. Then follows toothache, the sensation of which is easier to learn by experience than to describe on paper. Again, when a tooth is necrosed or carious, and the pulp has become exposed, the latter inflames from mere contact with the air, and pressure causes the greatest agony.

Treatment: As I have said, a tooth should not be extracted unless that proceeding be absolutely necessary, as in a crowded jaw, or where there is great irritation of the neighboring parts. The best method is to destroy the pulp. This may be done by

placing the following in the hollow of the tooth, and over it a piece of cotton wool dipped in mastic varnish.

<i>Formula</i> (93).	White arsenic.....	$\frac{1}{8}$ grain.
	Morphia.....	1 grain.

This is an almost painless proceeding, and I strongly recommend it. Or a very fine stick of silver nitrate may be thrust into the hollow so as to attack the pulp.

The following are some of the many "infallible" (?) remedies for toothache:

1. Creasote on cotton wool placed in the hollow of the tooth, and covered by cotton wool soaked in mastic varnish.
2. Washing out the mouth with hot water containing bi-carbonate of soda in solution.
3. Insertion of a piece of gall nut into hollow of tooth.
4. Two parts of powdered alum, with seven parts of spirit of nitrous æther applied to the gum and tooth.
5. Warm salt and water.
6. The preparations of opium, especially laudanum.
7. Alcohol.
8. Tobacco.
9. Cold.
10. Heat.

As I do not wish to leave the reader in a state of uncertainty as to his proper line of action when suffering from toothache, I will briefly explain the rationale of these different remedies.

As I have said, the best method is to destroy the pulp by means of white arsenic, which acts as a caustic, and morphia, which lessens the pain, which would otherwise be occasioned by this process.

Creasote is an astringent, checking the vascular supply of the pulp, producing contraction and hardening of its mass, and acting as an antiseptic to the carious tooth.

Cotton wool soaked in mastic varnish serves to exclude the air, and, therefore, protects the pulp. Bi-carbonate of soda is directly soothing to raw or exposed surfaces; it appears to affect the nerves, more immediately lessening their irritability. This is probably due to some chemical change produced in the

nerve tissue, but our present knowledge on this point is imperfect. Hot water and heat relax tissues, remove tension, relieve congestion, by dilating the vessels when in this state, and so lessen pain. Gall nut acts as an astringent, lessening the blood supply, and, therefore, the sensibility of the part. Alum also acts as an astringent. Spirit of nitrous æther, alcohol, laudanum, and tobacco stupefy the nerves, that is, they produce such chemical changes in their substance as to diminish their power of action for the time. Cold is an astringent, so is salt.

If there be violent pain, it may first be soothed by washing out the mouth with, and afterwards retaining on the affected side half a wineglassful of warm water, containing 40 drops of laudanum, this should not be swallowed. At the same time hot flannels may be applied externally. When the pain has subsided, powdered gall nut or tannin should be placed in the hollow of the tooth, and retained with cotton wool dipped in mastic varnish, or, instead of inserting these substances, a strong solution of alum or tannin in water may be used as a mouth wash.

In any case where the pulp has not been destroyed, the daily use of one of these washes, or of salt in tepid or cold water, will harden the pulp and hinder the return of the toothache.

It sometimes happens that a mere stump is left level with the gum, but exposing the extremity of the nerve, which passes through the fang, and which is exquisitely sensitive. The best method of removing the pain in such a case as this will be to use a stick of nitrate of silver freely to the whole stump, or a piece of wood dipped in strong nitric acid. Some immediate aggravation of pain will result, but if properly done the sensibility of the parts will be destroyed. After the application the mouth may be washed out with warm water and laudanum (see above). This will serve to prevent inflammation occurring in the gum and deeper parts of the fang as a consequence of the irritation which in some cases results from the escharotics.

Notched and Ridged Teeth.—Treatment: Ridges cannot

be removed, for the enamel would be injured, and caries probably result.

When a tooth has been notched, as the result of accident, the patient should consult a dentist, who will file the part. If left alone caries may begin at that point.

When the front teeth are naturally notched, the patient should also see a dentist. It is utterly impossible for me, not having seen the patient, to say what may or may not be done, in any individual case.

When the front teeth are notched and peg-shaped in appearance, the individual should not repair to the dentist, but consult a medical man. It is an indication of a constitutional condition which is not to be trifled with.

Irregularity of Teeth.—This is sometimes produced by bad formation of the jaw, at others by rough usage of the growing teeth, as in eating hard food, etc.

Treatment: This condition may easily be prevented by proper care. The milk teeth are of no consequence, so I will speak only of the permanent. When a "second" tooth cuts it should for some weeks not be used more than is inevitable and it should never be used to masticate hard crusts, etc. The teeth should be frequently inspected, and if they threaten to become crowded, one of the molars or bicuspid in the jaw concerned should be extracted to afford more room for the others. If they commence to grow unevenly, a little pressure made with the finger once daily on the offending members will direct them into a proper position. If from neglect a tooth has grown directly outwards or inwards, it should be extracted, as, if it be a bicuspid or molar, it may irritate the tongue or cheek, and if it be an incisor or canine it is most unsightly.

When the crowding and consequent irregularity of the teeth is *un fait accompli*, the first bicuspid on one or both sides of the jaw affected should be extracted. The condition of the incisors and canine teeth will decide whether one or two shall be drawn. Then the front teeth are every day to be pressed towards their proper position. A fine piece of string may gradually be worked between any two teeth, and in this man-

ner overlapping members may in time be separated, and given a more correct position.

Necrosis of Teeth.—The tooth is not lessened in size, as in caries, but is black and very frequently loose. It is most frequently caused by injury or excess of mercury.

Treatment: There is no real remedy at present known. The patient's general health should, if it be enfeebled, receive the first attention. If the tooth causes no inconvenience, it may be allowed to remain, or it may be extracted, and a false one substituted.

It sometimes happens that, when a tooth is decayed, intense inflammation and swelling will result in that part of the face. The seat of the mischief is the socket of the tooth, and the most effectual remedy is to have the latter extracted. If this be objected to, warm fomentations should be used to the inside and outside of the face, and hot poultices to the latter. Directly the presence of fluid can be detected in the swelling it should be pierced with a sharp lancet or penknife, and the fomentations be continued until the swelling subsides.

It occasionally happens, however, that the inflammation is chronic, and not acute, there is no great swelling, there may be no pain, but on the gum situated over the fang of a tooth a small eminence appears, it gradually comes to a point, and then, if this be opened, pus will exude. This is a "cold abscess;" it is due to the death (either caries or necrosis) of part of the tooth fang, and, if the condition be that of necrosis, sometimes a portion of the jaw in the immediate neighborhood of the tooth is involved. The process of tissue disintegration and its casting off in the form of pus will continue so long as any dead bone or tooth remains. If the crown of the tooth be decayed it will be best to have the stump extracted. If it be sound and the discharge be slight, the part should be freely pierced directly any swelling appears, so as to evacuate the contents of the latter.

It must be understood, however, that necrosis of a portion or the whole of either jaw may result from causes essentially non-dental in character, as mechanical injury, and chronic phosphorus poisoning. In these cases, of course, the only

method of procedure for the patient will be to take surgical advice, and probably to submit to a surgical operation.

Tooth Powders.—These formulæ are of many years' standing.

Piesse and Lubin's Tooth Powder.

<i>Formula 94.</i>	{	Precipitated chalk.....	1 lb.
		Orris powder.....	1 lb.
		Carmine.....	$\frac{1}{2}$ drachm.
		Powdered sugar.....	$\frac{1}{4}$ lb.
		Otto of roses and Neroli, each.....	1 drachm.

Opiate Tooth Powder.

<i>Formula 95.</i>	{	Honey.....	$\frac{1}{2}$ lb.
		Precipitated chalk.....	$\frac{1}{2}$ lb.
		Orris powder.....	$\frac{1}{2}$ lb.
		Tincture of opium and myrrh, each.....	$\frac{1}{4}$ oz.
		Essence of cloves, nutmeg, and rose, each.....	$\frac{1}{2}$ drachm.

<i>Formula 96.</i>	{	Cuttle fish powder.....	8 oz.
		Rock alum.....	1 oz.
		Cream of Tartar.....	2 oz.
		Orris root.....	1 oz.
		Burnt hartshorn.....	2 oz.
		Oil of rhodium.....	6 drops.

<i>Formula 97.</i>	{	Charcoal of the areca nut.	
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<i>Formula 98.</i>	{	Prepared chalk.....	2 oz.
		Cuttle fish.....	1 oz.
		Orris root.....	1 oz.
		Myrrh.....	$\frac{1}{2}$ oz.
		Sulphate of quinine.....	10 grains.

<i>Formula 99.</i>	{	Orris root.....	4 oz.
		Cuttle fish.....	2 oz.
		Cream of tartar.....	1 oz.
		Myrrh.....	$\frac{1}{2}$ oz.
		Oil of cloves.....	16 minims.

<i>Formula 100.</i>	{	Peruvian Bark.....	1 oz.
		Cream of tartar.....	2 drachms.
		Myrrh.....	1 drachm.
		Cuttle fish.....	4 drachms.
		Oil of cloves.....	8 drops.

<i>Formula 101.</i>	{	Cuttle fish.....	8 oz.
		Cream of Tartar.....	4 oz.
		Orris root.....	2 oz.

CHAPTER VI.

HANDS, LEGS, AND FEET.

THE HANDS.

Crooked Fingers —These are to be treated by the splints spoken of below. They should be united by straps in three places, at least, or by a simple bandage wound tightly round them.

Enlarged Joints of the Hands.—The hand may be abnormally wide, and the joints of the fingers may be enlarged. These conditions may be congenital or produced by hard work, athletic exercises, etc.

Treatment: If the hand be wide, two pieces of metal or very thick leather, one and a half inches in width, and their length less than the width of the hand by one-quarter of an inch, should have two of their narrow extremities fastened together with strong flexible leather. The other two ends should be united by a strap and buckle. The hand is to be placed in this, and the strap drawn as tight as can be borne, the instrument being kept on for six or eight hours at a time. The instrument should fit the hand just over the joints of the fingers bordering on its palm and back. The joints should not be allowed to bulge backwards or forwards, but should be evenly compressed in one line.

If the joints of the fingers be enlarged, a splint made of thin wood, metal, or thick leather, should be placed on the inner, and another on the outer side of the finger; these are to be tightly strapped together over the joint and at the extremities of the fingers, and the appliance should be kept on for some hours.

In all cases of enlarged joints, iodide of potassium ointment may be rubbed freely into the parts.

THE LEGS.

Bow Legs.—These result from bad nursing. Even when a child has rickets, they result from the same cause, for the condition of the child's health should be known, and it ought not to be allowed to set foot on the ground without wearing proper supports. Ricketty children, or children already suffering from bow legs, should wear an inflexible metal or wooden splint, passing from the inside of the thigh to the ankle, padded on the side nearest the skin, and jointed at the knee; this should be fastened on with straps of webbing; but rickets itself must be treated by internal remedies. Bow legs are a mere symptom of local weakness and diminished nutrition, and the symptom arises, as I have said, from gross neglect of common sense measures.

With regard to adults, I may say that it is quite possible to modify the shape of any bone on which we can operate by pressure. Bones, like all other tissues, are not permanent, that is, they are being renewed particle by particle every moment of our existence. When appliances are used, it is found that the change in shape does not at first proceed so rapidly as later on, and the reason of this I will explain.

When a crooked bone has pressure made on it to restore it to a right shape, the pressure is at first antagonistic to every cell of that bone, since it is really attempting to alter their position; but the pressure being constant, as the new cells are formed, they yield as much as is possible to the new influence, that is, they fall more into the line of axis which it is sought to give the bone. These new cells become matured, and many old cells die, and are replaced by new ones, all more obedient to the new mechanical force than those of the bone before the pressure was applied. In this manner they themselves are now directing the very young cells into the shape the bone has acquired, that is, they are fighting on the side of the apparatus. In this manner, as time elapses, so does the number of cells leading to the new shape increase. Hence the progress to the latter must be quicker in the later than the earlier stages of the process, for, as I have intimated, while the pressure continues.

each new cell is influenced to a certain extent by it, and hence becomes a factor in the work of the apparatus.

A splint for an adult may be similar to the one I have recommended for a child; but it should be stronger. It may be well padded just where it fits the inside of the knee.

Knock Knees.—These may be congenital, or caused by rickets, mismanagement, etc.

Treatment: A straight wooden or iron splint, jointed in the middle (and, for an adult, of about 14 in. in length) should be placed on the inside of the knee, the joint being level with the latter. It should be well padded in this region so as to press against the side of the joint. This should be lightly fastened with webbing straps above and below the knee, but no strap should be passed round the latter.

Another method is to apply the same splint to the outer side of the joint, and beside the straps above and below the latter, to pass a broad one round the joint itself so as to pull it outwards. Sometimes long splints are used reaching from the hip to the ankle; but they are more irksome to patients than the shorter variety.

THE FEET.

Bunions.—A bunion is a swelling over the “ball” or metatarsal joint of the great toe. There are several varieties: thus, there may be a soft tumor, inflamed or not; secondly, a harder tumor, but still distinct from the bone; thirdly, there may be a suppurating tumor; and, lastly, the joint itself may be thrown inwards, the great toe pointing outwards.

Treatment of the first three varieties: When inflammation is present, rest and warm fomentations or the application of belladonna ointment until the inflammation is subdued. Then the treatment will be the same as for the originally inflamed soft tumor, viz., friction, and painting with iodine, or the iodide of sulphur ointment rubbed in nightly. If the part be suppurating, poultices must be applied, the matter evacuated by incising or pricking the part, and the poultices continued until the suppuration has ceased. Then it may be painted with iodine, and allowed to rest until well.

Distortion of the joint may be congenital, but it generally arises from wearing short boots, by which the joint is thrust inwards, and the toe itself directed outwards.

Treatment: A pad must be placed between the great toe and its neighbor, so as to direct the former inwards. The pad must be narrow towards the web of the toes, and thicker as it approaches the nails. Another pad must be placed over the eminence on the inner side of the foot, and a strong elastic band or a strap must be fastened round the foot, passing over the pad, so as to press the joint outwards as much as possible. The boots should be so long as to leave the toes free in front. Iodide of potassium ointment may be freely rubbed into the joint every night. In using ointments for local affections it is well to cover the fingers with a piece of thin india-rubber or a hog's bladder, as it is not desirable to absorb the drugs of which the ointments may be composed into the system to a greater extent than is inevitable if they be used at all.

Club Foot or Talipes.—There are many varieties, as talipes equinus, when the heel is raised, and the patient walks on the front part of the foot, talipes calcaneus, when the toes are raised, and the heel depressed; talipes varus, when the patient walks on the outer edge; and talipes valgus, when the person walks on the inner edge. Then there are combinations of two or more of these positions indicated by their name, as talipes equino-varus and equino-valgus, talipes calcaneo-varus and calcaneo-valgus.

Causes: Primary contraction of certain muscles, congenital or otherwise, or paralysis of their antagonists, allowing those still active to shorten.

Treatment: If paralysis exist, tonics and local galvanism, with friction, etc., should be applied. If due to suddenly occurring spasm, especially in children, irritation of the bowels or gums must be looked for and remedied, while the above treatment may also be put in force. The radical cure of talipes is effected by cutting through the tendons of the contracted muscles. If the patient objects to this, he had better proceed on the following plan:

Supposing the heel to be raised, and pressure to be made on

the ball of the foot, then the ordinary boot should be worn, but with this difference : The inside of the boot should have its bottom lined with about ten leather, felt, or cork soles; these socks should be of about one-third of an inch in thickness at the heel extremity, and gradually thin as they near the toes, where they should be almost as thin as paper; the boot need not be larger than it would otherwise be, for the foot being raised in its interior, a certain amount may, of course, be deducted from the height of the heel. The patient may wear this for a month, and then take out one sole and wear the boot again. In this manner, if the boots be so made towards the toes as to hinder the patient from walking on the ball of the foot, the tendon (*tendo Achillis*) at the back of and above the heel will be of necessity gradually stretched. Now, when the heel touches the sole without any sense of straining in the tendon, another sole may be removed. In this manner, in process of time it is possible to cure talipes equinus. The earlier the treatment is adopted, the more chances are there of remedying the evil. In talipes calcaneus, where the toes are raised, the same principle may be carried out, the thicker ends of the sole being directed towards the toes. In all other varieties of talipes the principle may be applied. A clever maker should be able to fashion boots to suit the peculiarities of any case.

With regard to the amount of walking a patient should take while undergoing this treatment, it must be regulated in a great measure by his own feelings. A slight aching in the tendon may be disregarded; but the patient should certainly *not* walk until violent pain arises, as it may, from prolonged straining of the tendon. Should this occur, rest the foot and bathe it in cold water. It is not any sudden amount of exercise, but very gradual tension, which will be found the best remedy, therefore, the patient should commence with short walks, and increase their length as he finds the part less inconvenienced by the absence of direct support. Oil may be freely rubbed into the tendon every day; it will assist in softening its substance.

Splay Foot is caused by the giving way, or the congenital laxity of the ligaments which support the arch of the foot.

Treatment: The feet should be bathed in cold water daily. The boots and slippers must be fitted with a convex pad, so as to support the arch of the foot. The patient should have a webbing strap passed round the leg just above the knee. A bandage should be sewn on to one side of this, carried down the leg under the arch, and brought up on the other side and fastened to the strap; this will also assist in supporting the arch.

Turning Feet in and Outwards.—The proper position of the feet in relation to each other is an angle of about 45 deg., the vertex of the angle being formed by the heels.

Turning the toes in, or too much outward, is, if talipes do not exist, the result of habit, and can be cured by voluntary efforts.

Weak Ankles.—**Treatment:** The patient's boots should be made with the inner edge of the sole and heel much thicker than the outer; or a cork sock fashioned in this manner may be placed inside the boot.

Druitt recommends the heel alone to be so raised on its inner edge, but I believe the above plan to be better. The ankle and foot may also be well bandaged. Friction and cold bathing will assist in strengthening the part.

THE NAILS.

The nails are modifications of the epidermis. The true skin beneath the nail, instead of producing ordinary epidermal scales, gives origin to the harder and differentiated variety which forms the nail.

Ingrowing Nails.—In this condition, which may be congenital, or the result of injury, the nail is short and often composed of two or more apparently overlapping layers of tissue like the slates on the roof of a house. The distal extremity of the nail does not reach to the end of the fingers, the fleshy part of which is bulged up in front of it, so that the nail's progress forwards is hindered, and, as a consequence, it may

embed itself in the tissue from which it has to be raised in order to be cut when the part becomes painful.

Treatment: The whole nail should be scraped or filed thin, all irregularities being removed. Then the extremities should be raised, and cut off beyond the part to which it is attached by growth. If the extremity of the finger be thickened and horny, it should be rubbed down with moistened pumice stone. The future of the nail will now depend on the attention that is paid to it. After the operation, the fingers should be covered with a stall for some weeks, but the latter may be removed every day for the purpose of bathing, etc. So soon as the distal extremity of the nail is seen to be growing, it should be gently raised, and the flesh of the finger pushed down, so as to remove any impediment to the forward growth of the nail. If this be repeated daily, and the part protected, the nail will eventually reach the extremity of the fingers. It had better be allowed to grow a little beyond this, and then kept carefully cut.

Deficient Growth of Nails.—If a nail exists of the normal width, it will have the normal length if it be properly looked after, no matter how disfigured and stunted it may be before treatment. The latter is to be that given in the preceding section.

Loss of Nail.—When a nail becomes dark in color and loose, the finger should be protected by a stall, until the old nail has been shed and the new one well developed; the old nail should on no account be pulled off. It will hasten the separation if the part be soaked for a few minutes daily in hot water.

Ridges on Nail.—These may be rubbed down with moistened pumice stone. The nail will for two or three days after this has been done have a duller appearance than usual.

Pits in the Nail.—Little depressions scattered over its surface. If these are not very deep, the nail may be rendered smooth by rubbing it with moistened pumice stone powder.

The Skin around the Nail.—The thin veil of skin at the base of the nail should never be cut entirely away, unless it be very ragged. It should be raised once daily with a blunt

instrument from the nail beneath, and if it is ragged it should be trimmed with a pair of sharp pointed scissors; the skin round the sides of the nail should be kept smooth with pumice stone; the angles of the front of the nail often grow downwards into the skin, causing great tenderness; they should be raised and rounded off with a pair of scissors.

White Spots on Nail.—These are caused by opacity of the cells, due to injury.

Treatment: Do not apply any chemicals, but rub the nail with pumice stone powder moistened. As the nail grows, the spots will disappear.

Discolored Nails.—If caused by acids, rub the nail with liquid ammonia; if by alkalies, use vinegar or lemon juice. Nitrate of silver stains may be removed by solutions of iodide of potassium or sulphhydrate of ammonium; fruit and ink stains by oxalic or sulphuric acid in water, or salts of lemon (oxalate of potash). The hands should not, except when the last is used, be washed with soap for some hours after the application.

CHAPTER VII.

MISCELLANEOUS.

Cold Feet and Hands may arise from local or constitutional causes. The local are, chiefly, insufficient coverings, exposure, etc. The proximate constitutional cause is an impaired circulation, which in turn is due to some other functional or organic disease of the nervous or circulatory apparatus.

Treatment: If the patient suffers from debility he can soon be put right in this respect by proper internal remedies. Even if he suffer from organic disease of the heart, the organ may be strengthened, and his life prolonged by judicious scientific treatment. Certain remedies for cold extremities are obviously at hand. Thus they should be properly covered (I shall deal with this in the hygiene of dress). The patient should, if possible, avoid standing about in the cold. Exercise promotes the general circulation, and local friction will assist the blood-vessels of the part.

Cold in the Head.—First of all clear the bowels by taking some simple aperient, and one or two of Frampton's or Holloway's or some other well-known pills will do as well as anything. After taking the pills, have a warm bath in a warm room; rub the body with towels until it is aglow, and then go to bed, the sheets having been previously warmed. When in bed take as one dose,

Formula 102. $\left\{ \begin{array}{l} \text{Sulphuric æther} \dots\dots\dots 60 \text{ minims.} \\ \text{Phosphorus} \dots\dots\dots \frac{1}{xv} \text{ grain.} \end{array} \right.$

This should be placed in a tumbler, which should then be filled with cold water. The nose should be covered with warm flannels from the bridge downwards.

The following should be used as a snuff. It should be

snuffed up gently into the nostrils, not more than the amount mentioned being used in six hours.

Formula 103. { Morphia.....1 grain.
 { Subnitrate of bismuth.....1 grain.

In the morning strong hot coffee may be drunk before rising, the stronger it is the better.

When the patient arises, if the weather be cold, there should be a fire in his room; he should then take another warm bath.

Now he may either confine himself to the house during the day, taking care to avoid all draught and sudden changes of temperature, or, having wrapped himself well up, he may take a brisk walk, not stopping to look in the shops or talk to friends, but continue walking as quickly as possible until he returns home, when the wraps should be immediately flung off. On entering the house, if the weather be cold, and there is a fire in his sitting room, he should not immediately approach it, but remain at a distance until he has become accustomed to the temperature of the room.

Those who are compelled to follow their avocations must take what precautions they can against draughts, etc. The morphia and bismuth snuff will assist in allaying the inflammation of the mucous membrane, and bathing the nose in warm water will serve the same purpose. If the nostrils be tender a mixture of equal parts of subnitrate of bismuth and glycerine rubbed on the parts will remedy this condition.

The patient must remember that a cold is debilitating, and the system must, therefore, be supported by nourishing food.

Cramp.—This is due to the spasmodic contraction of the muscles of any part. The usual seat of attack is at the back of the knee.

Treatment: The immediate treatment is to forcibly extend the leg. The person should at the same time be seated: if this is not possible, rest the body against a wall or other object, and then extend the leg to the utmost possible extent. To partly flex the limb, as is sometimes done, is to invite the continuation of the pain. While the limb is being so extended, the back of the knee and the thigh may be rubbed briskly by another person for a few seconds, or until the attack subsides.

The preventive treatment consists in well bathing the legs and subsequent friction. If the attacks are frequent, internal remedies are plainly indicated. The constant current will also be of service; it should be passed from below upwards, so as to lessen the natural nerve current.

Flatulence.—This, whether of the stomach or intestines, is produced by some abnormality in the process of deglutition, digestion, and absorption of food eaten.

A healthy baby may take its milk greedily, presently it stops and cries, some simple remedy is given it, the child belches and is better; mothers and nurses call this "the wind," and wind or air it is which the child has been greedily swallowing, both compressing the air which always exists in the stomach, and taking more down with its food. An adult may suffer in the same manner, and from a similar reason. This is the simplest form of flatulence—compressed air. But a worse variety is that which arises from indigestion; the food not being readily converted in the stomach into the materials requisite for its absorption, fermentation may commence. In any case the two chief elements separate, combine, and are belched up as carbonic acid gas. When the partially digested food enters the intestine, it should be at once rendered fit for absorption. But if this is not the case, it passes downwards beyond the digestive regions; now, if the bowels be open it may be discharged, and no great flatulence result. But again, if this is not the case, it disintegrates in order to get rid of as much of its bulk as possible. In this manner sulphuretted hydrogen gas is formed. Certain drinks, as soda water, champagne, etc., by liberating their contained gases in the stomach, produce flatulence. In the intestines it may be caused by eating hard boiled eggs.

Treatment: From what has been said the line of treatment will be evident. If the patient is a baby, the tube should be air tight, and the flow of milk should be large and free. By these means the child, finding the milk come without effort, will not make those violent endeavors to suck and swallow, which result in transforming its little stomach into a pneu-

matic engine. If the child "has the wind" give it a teaspoonful of the following:

Formula 104.	{ Dill water.....	1 part.
	{ Caraway.....	1 part.
	{ Fennel.....	1 part.
	{ Cinnamon.....	1 part.

I say a "teaspoonful," because in mild cases this amount will be sufficient; but the dose may be repeated at intervals of half a minute, up to six spoonfuls.

With regard to adults, if they take their food greedily, they must expect flatulence, and no pity; but a wineglassful of the above preparation will give the sufferer from "wind" relief.

Flatulence, arising from indigestion, is, as I have said, more serious. Here the whole system must be put in order, so that it is not suited for discussion in the present handbook.

As a specific for the relief (not the constitutional cure) of this form of the complaint, whether in the stomach or bowels, powdered wood charcoal stands unrivalled. Mr. Bragg, London, is celebrated in the medical world for his manufacture of charcoal biscuits, lozenges, etc. But, if preferred, charcoal may be taken as a powder, moistened with a little brandy, and stirred up in water. The remedy being innocuous may be taken freely.

Muscular Development.—The weakest person, if not suffering from any actual disease, may become an athlete, so far as his arms and body are concerned, by practising daily for fifteen minutes' only. By this it is meant that he must at the same time take walking exercise in order to develop the muscles of the legs. He should commence, if an adult, with dumb bells *of the greatest weight he can lift without effort*. The exercise is as follows:

They are held close together in front of the mid-breast and touching the latter, then raised above the head, the arms being fully extended; then the arms are brought down until they are at right angles to the body, here a pause is made for a second, and then the arms are lowered, the bells brought round to the front of the body, and raised to the first position. This will develop the muscles of the arms and upper part of

the body. To develop those of the lower part, the following exercise should be practised, which will at the same time develop those of the whole of the back. Two weights are placed on the ground by the individual's feet. Standing then with his legs close together, he stoops without bending the latter, grasps the weights, and rises to his full height; they are then lowered steadily to the ground, and the exercise is completed.

The patient must test his strength to see the greatest weight he can lift without straining, and he should commence with this. He must also ascertain the greatest number of times he can perform each exercise without absolute fatigue. This number is the starting point, and to it every day he should add one more. In a very short time he will be inclined to add twenty or more; but I must caution the would-be athlete against any sudden jump, for although the muscles may feel vigorous, they cannot perform a great excess of their ordinary work without being exhausted.

Nettle Stings are caused by the minute prickles of the nettle piercing the epidermis. Chemical changes are set up in the tissues, and if the surface stung be extensive, the condition may prove dangerous.

Treatment: Ammonia, one part of dilute to three of water, should be used as a lotion, and lint soaked in the same be placed over the part. It will be well to examine the skin with a lens, and to remove any prickles which may be present.

Offensive Breath.—Causes: the primary are constitutional, the proximate are an unhealthy state of the mucous membrane of the mouth, gullet, and stomach. It is weak and inactive, and its cells are not properly cast off and renewed, the external layers being slowly disintegrated. Another proximate cause is the retention of undigested food in the stomach.

Treatment: This, in the main, must be constitutional. The odor may be corrected by washing out the mouth with Condy's Fluid, and by taking the following draught twice a day:

Formula 105. { Chlorate of potash 15 grains.
 { Water 1 oz.

Pins and Needles.—This is an interesting physiological condition. When pressure is made on the trunk of a sensory

nerve, or on the trunk of a nerve containing sensory fibres, or other irritation is applied to it, the effects are felt in all those parts to which the sensory fibres are distributed below the point irritated. The condition called "pins and needles" generally attacks the lower part of the leg and foot, and is then caused by sitting with the legs crossed, or with the legs bent in such a position that the nerves at the back of the knee are pressed on. The real point of affection is in the latter region; but inasmuch as the nerve fibres from the foot and lower part of the leg pass through the nerve trunks in this locality, and as the mind has always been accustomed to refer impressions made on these fibres to the situations where their extremities are found, it continues to do so when they are irritated in the course of their passage, as at the part referred to. For the above reasons, men who have had their legs amputated at the knee have complained of pain in the feet and toes, the nerve fibres passing to which have been irritated at the point of amputation.

The only treatment necessary is to extend the limb for a few seconds.

Poisons.—Treatment: Send for the doctor, meanwhile for—

STRONG ACIDS.—If these have been swallowed, give chalk, ammonia, carbonate of magnesia, plaster scraped from the walls or ceiling, or any alkali, stirred up in water.

CAUSTIC ALKALIES.—Give vinegar, *ad lib.*

CARBOLIC ACID.—Give oil, *ad lib.*

Antimony, zinc, tin, silver, phosphorus, and all other poisons, except those mentioned above—emetics of salt and water or mustard and water. The back of the throat may be tickled with a feather to provoke vomiting.

If any preparation of opium has been swallowed in a poisonous dose, in addition to emetics, electricity, the application of ammonia to the nostrils, strong coffee and tea, and walking the patient about are the most ready remedies. If oxalic acid has been taken, in addition to emetics, any preparation of lime may be given, but not soda or potash.

Round Shoulders.—This condition is generally acquired. Patients suffering from debility do not feel sufficiently ener-

getic to keep their shoulders well back, but let them fall into that position which the law of gravitation may give them.

Again, it may result from constantly bending over the desk in writing, from the prolonged habit of reading with the elbows on the table, from lolling for hours daily in an easy chair, etc.

It is generally accompanied by—

Stooping Gait, which may also result from the same causes.

Treatment: Webbing straps should be passed round both shoulders and united behind by two others, and in front by one. Ready-made appliances, similar in principle, may be obtained of any surgical instrument maker. But a great deal more than this has to be done. If the patient be weak, then his general health is of the first consideration. He must take nerve tonics, nourishing food, cold or tepid baths, and breathe fresh air.

Whether he be debilitated or not, he must take exercise—walking, that is, real brisk walking, is good. And here I may say that in walking he should try as much as possible to keep the body upright and the shoulders back. Let him walk like a dragoon in this respect. Keep the head up; but thoughtful people have often some difficulty in acquiring this habit, although many do so naturally. Were an artist acquainted with surface anatomy to paint the figure of an ideal man, he would depict him with the shoulders thrown back, the breast forward, the body upright, that is, with the bow of the arch directed forward, the head raised, and therefore the throat and neck full forward.* This is a position associated with *hauteur*, if you like, but it is that which gives free play to the lungs, places the body in that position in which it is most easily carried by the legs—by this means lessening the chances of weariness—and gives to the whole system a vigor it could not otherwise possess. This is the ideal every patient should imitate.

Then dumb bells will be of service. The ordinary exercises

* The curve of the body follows that of the spinal column.

should be undergone, and, in addition, the bells should be grasped, the arms flexed, and the shoulders thrown back.

With regard to those cases of "Bible-back," as they are termed, which occur in men who carry heavy weights on this part of the body, the same treatment may be put in force: but as, of necessity, any good which might otherwise result is constantly being more or less negated by the habit of carrying alluded to, the time occupied in rendering the figure normal will be much longer than it otherwise would.

Scratches.—Pins, rusty nails, etc., often inflict very ugly scratches, which, if left alone, may fester. So also the scratch of a cat, if the latter has been touching putrefying material with her talons, may result in violent inflammation.

Treatment: The best thing to do is to thoroughly wash the part as soon as possible after the injury with one part carbolic in 60 of water, and then to cover with collodion.

If inflammation supervenes, the carbolic poultice (page 16) should be used.

Sore Nipples generally occur during suckling. If the skin is much cracked and fissured, the child should not be given the breast, but be fed by bottle. The milk should be drawn off by the breast pump every morning and evening for a week, and then every morning only. Meanwhile, the breast should be rubbed every night with belladonna ointment and washleather, spread with the same ointment, should be kept over the breasts. Under this treatment the supply of milk will gradually lessen, and the patient may discontinue the breast pump when the milk only comes away in minute quantities. The nipples may be painted with collodion where fissured or excoriated, or they may be touched with a paste composed of

<i>Formula 106.</i>	{	Olive oil.....	1 part.
		Rectified spirit.....	1 part.
		Subnitrate of bismuth.....	1 part.

Sprains.—A sprain is the overstraining of the ligaments connecting a joint, and is generally accompanied by the rupture of some of their fibres.

Treatment: Immediately after the accident, or before the

part becomes red and inflamed, *cold* should be applied. The joint may be placed under a tap, or have water from a can poured on to it. Then it should be firmly bandaged, and have absolute rest in an elevated posture for twenty-four hours. If then the joint is only very slightly painful the bandage may be removed, the part bathed in cold water as before, and the bandage reapplied. If, however, in spite of this treatment, and from the great injury the ligaments have received, the joint has become red and inflamed, its further treatment will be the same as if it had not been examined for some hours, and had then been found to be in this condition, viz.: Add one ounce of decoction of poppy capsules to ten of hot water, and foment the part with this for fifteen minutes. Then dry, and rub belladonna ointment into it, a piece the size of a sixpence to every square inch of surface. Spread a piece of lint *thickly* with the same ointment, place it round the joint, apply a bandage, and preserve all possible rest of the part. The part need not be touched again for forty-eight hours, when the treatment may be repeated. When the inflammation and pain have subsided, pursue the cold treatment recommended above. Finally, if a joint has been badly sprained it should be strapped with adhesive plaister or carefully bandaged before the patient makes use of it, and the strapping or bandage should be kept on for at least a week. This will prevent the newly united tissues from rupturing.

Varicose Veins are due to constitutional or local causes. Any impediment in the course of the circulation will predispose to this condition, especially in the lower extremities. The immediate and often only cause of varix in the legs may be standing about. There is no exercise to promote the circulation, and the body is placed in that position which, through the law of gravitation, most hinders the return of blood to the heart. As a consequence the column of blood presses on the vascular walls, dilating them. The occurrence of varicose veins is often promoted by debility, for the venous walls being in a weak state yield the more readily to any mechanical force.

Treatment: The legs and feet should be bandaged with an

elastic or flannel roller, but if this cannot be done properly it is better to wear elastic stockings. The legs and feet should be bathed daily in cold water, and friction be applied *from the foot upwards*. If the arms are affected the same treatment is indicated. These, however, are merely local remedies. If there be a constitutional cause, as debility, whether premature or of old age, heart or liver disease, etc., it must be treated by internal medicines.

Varicose Veins of the Brow.—I place this condition apart from common varix, of which I have been speaking, for greater facility of reference and consideration. The causes, as a rule, are purely local, and have no connection with the general health. Varix of the brow may be said to result in ninety-nine cases out of every hundred either from the habit of bending the head in study, etc., or over the fire, as in cooking, or from wearing ill-fitting hats. In the first case the veins of the neck are compressed, both by the doubling of the tissues and sometimes by pressure on the collar, etc. In the second the heat relaxes the coats of the veins of the brow. In the third the veins are compressed by the inner edge of the brim, and so dilate above.

Treatment: The neck should not be tightly confined. If the causes are avoidable, as those of which I have spoken, the first step in treatment is obvious. Local cold bathing should be practised. On retiring to rest fasten an elastic band, three inches wide, round the brow and head.

Wounds.—The character and situation of a wound must determine its treatment. If a large vessel be divided and the bleeding is profuse a surgeon should be sent for, in order that the vessels may be tied. So also if the wound is lacerated any extent, the patient should not trust to the amateur treatment of laymen, since fatal results often accrue from unskillful treatment in this class of cases. If the palm of the hand be wounded a large rounded stone or other object covered with a handkerchief should be placed in the hollow of the hand and bound tightly to the latter. If the leg, thigh, or arm be the part, then a handkerchief or piece of cord may be tied round the limb *above*, and another ligature be placed *below*

the wound, while pressure by means of a pad may be made over the wound itself. If the face or head be cut a pad should be placed over the wound and retained by a handkerchief tied tightly. I have been speaking of dangerous wounds, that is, of such as left to themselves would probably result in death from loss of blood; and the treatment is, of course, intended, not to replace the services of the surgeon, but to obviate immediate danger until the latter arrives.

Wounds made by blunt instruments are generally jagged, and may contain dirt. The wounds should be washed out with tepid water, and then their edges may be united with strips of adhesive plaister. Clean cut wounds, which are less dangerous, may be treated in the same manner. If the hæmorrhage from a wound prove troublesome it may be stopped by the application of strong perchloride of iron, powdered matico or tannin. If nothing else be handy, flour or chalk, or even cobwebs, placed thickly over the wound will promote coagulation of the effused blood, and so restrain further hæmorrhage. Whatever dressings are used, the wound should be covered with lint, and not be touched for forty-eight hours, when the part may be gently washed and again covered with lint.

If the extremity of a finger, toe, or other part be cut off, the cut surface of the amputated part should be *immediately* applied to that of the other. There it may be fixed by means of a few simple stitches with needle and thread. Then a piece of court plaister should be applied *round* the point of solution of continuity, and over the whole organ warm lint covered with cotton wool should be placed. If this be done and a high temperature maintained, the cut surfaces will often unite, and the part be as before the accident. Success mainly depends on performing the operation immediately after the accident. Even when so long as half an hour has elapsed, however, union is within the limits of possibility. In such cases the amputated portions should be soaked in warm water, as also the other cut surface, for one minute; then the surfaces should be placed in contact, as directed above.

CHAPTER VIII.

THE HYGIENE OF DRESS.

Boots.—The essential hygienic “points” to be considered in a boot or shoe are these; first, its capability of keeping out moisture; secondly, its possessing sufficient porosity to allow the evaporation of the perspiration; thirdly, its accommodation to the shape of the foot; and fourthly, its lightness.

Gutta-percha or indiarubber soles certainly fulfil the first condition, that is, they keep *out* moisture, but then they keep in the perspiration. In the same manner, but to a greater extent, goloshes confine the secretion of the skin. I need not dwell on the mischiefs which arise from the latter condition, prominent among them is that of offensive feet.

But sometimes boots or shoes are worn soled with indiarubber or gutta-percha, but containing no inner sole of leather intervening between the outer sole and the skin of the foot. The result is the conversion of the sole of the shoe into a more or less irritating plaister; for as the substance absorbs heat from the foot and becomes warm, it, to use a popular expression, “draws” the living tissues, so that blisters and tender skin very frequently result. Patent leather boots again, have, as a rule, waterproof uppers, and these produce the same result as any other insufficiently porous material. Patent leather boots are generally worn for the sake of appearance, and this being the case, they may have their toes freely perforated; this will enable the perspiration to evaporate, in a measure, and if the sides of the uppers next the soles in the region of the under curve of the arch of the foot are similarly perforated, the process of evaporation will be much facilitated. The season of the year, the general character of the weather, and the pedestrian habits of the individual, must, of course, be the leading

factors in the consideration of the most healthy boots to wear. In dry, hot weather, canvas uppers and leather soles are doubtless of great advantage. In cold, dry weather, ordinary leather boots, with an inner sole of cork, will be found the best. In wet weather, also, leather uppers and soles will serve better than any other material; if the part between the soles and uppers be thoroughly well greased, and the chink filled with gutta percha, the wet will not easily penetrate the boot, since it is in this region that the water generally works its way through to the interior.

For men who walk to any extent, the best kind of boots in wet weather are the "Wellington," reaching to the knee; when cut off at the calf they are termed "half Wellington." They should be made to measure by a good workman, so as to well fit the foot, or they will probably gall the heel. The only objection to be urged against the use of these is that they are generally heavy. They have, of course, an excess of leather over that found in ordinary boots, but if the material reaching from the instep and heel upwards be of thin leather, the increase of weight over that of common boots will be found not to be very great.

I need not dwell on the absolute necessity, if the individual would preserve his feet free from corns, of having the boots made to accommodate the feet, and not to press them into a small compass. Especially, however, would I warn the reader against wearing short boots. If the great toe is thrust backwards, the result will be the yielding of its joint at the ball, which will project inwards, producing a most unsightly appearance.

I would finally remark that a little care in the matter of changing wet boots would very often obviate the necessity of wearing any extraordinary protective against the penetration of water.

Socks and Stockings.—In the winter the best immediate covering for the foot is merino. In summer the indication of the material to be worn will vary with the kind of boot. If the foot is confined in an ordinary slightly porous leather boot, then to wear cotton socks would be to confine the perspiration to the surface of the skin, for the cotton absorbs moist-

ure but slightly. If, however, light porous boots or shoes be worn, as those having canvas or cloth uppers, or the common shoe, then cotton socks will allow the perspiration to evaporate freely. Some kind of woollen material, however thin, is plainly indicated in cases where the perspiration is necessarily confined by the boot, and where it must either be absorbed by the stocking or sock, or remain to choke up the cutaneous pores.

Hats and Caps.—There is a *thing*, probably the supreme conception of a drunken lunatic, in shape & combination of the drain pipe and engine funnel, which *thing*, by the idiotic acquiescence of men, otherwise supposed to possess a slight amount of common sense, has become the recognized town head gear. And this *thing* is called a “high,” “pot,” or “silk” hat. One shower of rain spoils its gloss: it comes in contact with umbrellas and everything else it can conveniently approach or be approached by; it is taken to church to be spoilt by the mere sweep of a lady’s dress, it gets jammed between your neighbor and yourself in leaving the sacred edifice; it generally fits the head like a coal scuttle or a band of iron, in the latter case often producing a severe headache; it is an evil *thing*, having no single redeeming point, no *not one*. Then why do men wear it? Because it is the fashion to do so!

A proper head covering should be light, warm and porous. The season of the year and the locality where the individual is residing will have to be taken into consideration in deciding on the best article to be worn.

For winter wear the Tam o’Shanter and the round fur caps are unsurpassed for warmth and comfort. For summer wear the ordinary polo cap may be recommended, or if it be desired to shield the face from the sun a white soft felt hat will be found all that can be desired. Both in summer and winter a very excellent hat will be found in the hard extra-thin felt hat. For summer wear it should be white, for winter wear black in color.

Under Vests and Drawers.—In summer the most healthy and cool garment for the body is a white merino shirt. No under vest is necessary. If linen shirts are worn, then both in

summer and winter an under vest of flannel or merino will be found of great advantage in absorbing the perspiration. The thickness of the garment will, of course, be varied to the season. For drawers, those made of merino will in every climate be found the most comfortable and healthy. Wool is a good radiator, but a bad conductor, and so loose woollen underclothes might be thought to keep the body cooler than if fitting closely ; but as I have said, air is a bad conductor, and so loose fitting under garments would retain the heat to about the same extent as if tightly made. Ventilation, however, which is necessary to perfect health, can only be carried on perfectly when the garments are made loosely. It follows, therefore, that the coolest garments are those which permit a continual current of air to enter near the feet and to pass out at the neck. If fastened tightly in the latter region they would be warm, for the heated air could not readily escape.

Tight fitting underclothes conduct the heat at once from the body. Loose clothes keep the body warmer than the foregoing, because the air which intervenes between them and the surface of the body is a bad conductor of heat. The clothes having the heat of the body radiated to them become warmed, and the air from outside in passing through the meshes of the fabric becomes warmed also, so that it is prepared for reception next the surface of the body. The most permeable textures are the warmest, but the interspaces must be very minute, so as to assure the contact of the air with the fibres of the texture in its passage through it. The upper part of the body is always kept warmer than the lower, not so much on account of any greater amount of vascularity of the tissues, as that heated air rises, and, therefore, the lips are constantly receiving comparatively cold, and the chest heated, air. Those who would keep their beds warm should have the clothes well tucked in at the foot, for otherwise there will be a constant current of cold air from the bottom to the top of the bed. The bed may be cooled in the opposite manner.

Color in its Relation to Temperature.—Black is a conductor of heat, white a non-conductor. In winter it is desirable to conduct as much as possible of the sun's heat to the body,

and to prevent the conduction away of the body's heat; therefore black or dark garments should be worn externally, and those of a white color next the skin. In summer it is desirable, within certain limits, to conduct away the body's heat, and to hinder the conduction of the sun's heat to the body; therefore the outer garments should be as light in color as possible, but the under garments should not be dark, but light also, for the following reasons: The medium possessing the highest temperature is always the loser by the juxtaposition of a conductor. Thus in summer, if black were the only color worn, the sun's rays being hotter than the surface of the body, the outer medium would lose heat which the body would receive, and its temperature be raised inconveniently high. In winter, if black were worn next the skin the heat of the body would be conducted into the colder external air. If white were worn externally, then certainly the body's heat would not be conducted away; but whatever there might be of heat in the sun's rays would not be conducted to the body. So in a hot temperature it is advisable by wearing white to prevent conduction of the greater external heat. In a cold temperature it is advisable by wearing white next the skin to prevent conduction of the greater internal heat, and having secured this, to wear dark outer garments that whatever heat there may be in the sun's rays may be conducted to the atmosphere under the clothing, whose temperature it will raise, and thus, although but scantily conducted by the white under garments, will add slightly to the heat of the cutaneous surface. When, however, the sun's rays are so feeble that the heat they give out is unappreciable, as in the Arctic regions, white is the best color for the outer garments, for in such case there is nothing to gain and everything to lose by wearing a conducting medium.

Respirators.—The best respirators for workmen and others engaged in unhealthy occupations, as ivory turning, etc., are those made of cotton wool. A person may breathe with comparative ease in a room filled with smoke if one of these be worn; it should, of course, cover both the nostrils and mouth. For protection against noxious gases charcoal is unequalled.

A charcoal and cotton wool respirator can be made by any surgical instrument maker for a few shillings.

People should breathe through the nose. This organ is the commencement of the respiratory tract, and is designed to warm and act as a natural filter of the air breathed. A great number of cases of lung disease would be prevented were this advice generally followed. To breathe through the nose can in no single instance do harm. This is the only natural method of respiration; by its use the air the more directly enters the lungs. Cold air may in this manner be the more safely breathed by people with phthisical tendency. The greater number of consumptives have thin nostrils; this is partly congenital, and partly due to disuse of the organ as a respiratory medium. Consumptive patients being able to draw a greater quantity of air into the lungs through the mouth than the nose prefer this method of respiration, since it saves them much effort.

Muffling the Neck, Wet Garments, etc.—In dry weather, when the temperature is not very low, it is the most healthy plan to leave the neck and throat free and uncovered; but in very cold weather, and in all cases of fog, mist, rain, etc., the neck and throat should be covered. Cold may not be considered an indication of the necessity of protecting the throat if the individual is taking brisk exercise, but there can be no possible advantage in getting one's collar and shirt damp; on the contrary, it is a most dangerous practice for all persons, especially for those who are not taking active exercise.

The danger of wet garments is not great during exertion, for although the moisture absorbs heat from the body, yet the temperature of the latter is increased by the exercise, and so there is no appreciable loss of heat; but it will be evident that when the body is comparatively at rest, any unusual absorption of heat from its surface must leave its temperature much lowered. This, in fact, is the inevitable result, and the person is commonly said to have "caught a chill." A person might with impunity take a cold bath for a few seconds when fully dressed, if immediately afterwards he commenced running briskly, and continued to do so until his garments were dry.

When an unfortunate individual has had a ducking or drenching he should (unless he intends taking very active exercise until he is dry) walk or run home as quickly as possible, undress immediately, rub the whole body well with a dry towel until he is aglow, then he may take a cup of hot coffee and put on dry garments. In the majority of cases he will escape any unpleasant after consequences.

Gloves.—Kid gloves confine the perspiration, and, although they are fashionable, they will not be found one-half so convenient for summer wear as white silk. For winter use, lined kid are warm; but woollen, worsted, or twine gloves, especially the first-named, are equally warm, and far more economical. Cloth gloves are a delusion and a snare.

CHAPTER IX.

EATING AND DRINKING.

SUFFICIENCY of food, and no more, is one of the laws of health; that is, we should eat and drink until we are no longer hungry or thirsty, and then leave off. We should not take a heterogeneous mass of fluids and solids into our stomachs; he who lives the simplest oft lives the best, and the simplest food is that which affords the most nourishment with the least superfluity.

In eating and drinking, men constantly take articles of food because they are palatable, which injure the stomach locally, overburden the blood with material, and disorganize the whole system.

Eggs, soup, oatmeal bread, good beef, mutton, and poultry, etc., ripe fruits and vegetables, are to be considered the staple articles of diet. No dietary need be monotonous; the table managed on hygienic principles may be varied almost as much as that of the ordinary epicure; but the food should be natural, not messed about until its ingredients are far past all recognition, and then the contents of some half-dozen of those dishes crammed down the throat, to make the best arrangements they can regarding their absorption into the system.

"Food, therefore," says Husband, "contains the potential energy which, by processes acting within the body, is converted into actual energy, the sum of which we call life. The potential energy of meat food is greater than the energy it develops, because thorough oxidation of all the albumen can never occur, for some of the constituents of the albumen always pass out incompletely oxidized in the form of urea. The potential and the actual energy of sugar are, however, practically the same; for it is, as a rule, perfectly oxidized in the

body, passing off as carbonic acid and water. Serious mistakes would, however, follow on the formation of a dietary based on the potential and actual energy of different articles of food; for it is found that substances which differ but slightly in their potential energy cannot be substituted the one for the other."

This is true, and may be in other words written thus: The body consists of chemical combinations and food of chemical combinations, the latter being intended to supply the deficiency left by the excretion and loss of the former. But as of two articles of food identical in apparent chemical composition one nourishes the body and the other is merely useless, it is evident that there is some differential arrangement, atomic or otherwise, in the two foods, constituting a total variation in their nutritive powers, and that therefore mere analysis can furnish no actual test or proof *in favor* of the nutritive properties of any substance; it may render the latter *probable*, but experiment on the animal body is the only method of *proof*.

The varieties of food may be classified as follows:

1. Organic. { *a.* Nitrogenous..... } As eggs, muscle of brutes, fish,
 { *b.* Non-nitrogenous... } fruits, vegetables, milk, etc.
2. Inorganic. { *a.* Mineral or saline matters, as chloride of sodium, etc.
 { *b.* Water.

To understand what to eat, when to eat, and how to eat, we must first look at some of the elementary teachings of physiology.

The body of man consists of the following elements in the proportions given. The table is by Marshall:

Oxygen.....	72.0	Sodium1
Carbon.....	13.5	Chlorine085
Hydrogen.....	9.1	Fluorine08
Nitrogen.....	2.5	Potassium026
Calcium.....	1.3	Iron01
Phosphorus.....	1.15	Magnesium.....	.0012
Sulphur.....	.1476	Silicon.....	.0002

These exist the for most part in various combinations. Only three elements—oxygen, nitrogen, and hydrogen—are

found in the body in the free state, and these in very minute amount.

PERCENTAGE COMPOSITION OF VARIOUS ARTICLES OF FOOD
(Letheby).

	Water.	Albumen.	Starch.	Sugar.	Fat.	Salts.
Bread.....	37.	8.1.	47.4.	3.6.	1.6.	2.3
Oatmeal.....	15.	12.6.	58.4.	5.4.	5.6.	3.0
Indian corn meal	14.	11.1.	64.7.	0.4.	8.1.	1.7
Rice.....	13.	6.3.	79.1.	0.4.	0.7.	0.5
Arrowroot.....	18.	—	82.0.	—	—	—
Potatoes.....	75.	2.1.	18.8.	3.2.	0.2.	0.7
Carrots.....	83.	1.3.	8.4.	6.1.	0.2.	1.0
Turnips.....	91.	1.2.	5.1.	2.1.	—	0.6
Sugar.....	5.	—	—	95.0.	—	—
Treacle.....	23.	—	—	77.0.	—	—
Milk.....	86.	4.1.	—	5.2.	3.9.	0.8
Cream.....	66.	2.7.	—	2.8.	26.7.	1.0
Cheddar cheese.....	36.	28.4.	—	—	31.1.	4.5
Lean beef.....	72.	19.3.	—	—	3.6.	5.1
Fat beef.....	51.	14.8.	—	—	29.8.	4.4
Lean mutton.....	72.	18.3.	—	—	4.9.	4.8
Veal.....	63.	16.5.	—	—	15.8.	4.7
Fat pork.....	39.	9.8.	—	—	48.9.	2.3
Poultry.....	74.	21.0.	—	—	3.8.	1.2
White fish.....	78.	18.1.	—	—	2.9.	1.0
Eels.....	75.	9.9.	—	—	13.8.	1.3
Salmon.....	77.	16.1.	—	—	5.5.	1.4
White of egg.....	78.	20.4.	—	—	—	1.6
Yolk of egg.....	52.	16.0.	—	—	30.7.	1.3
Butter and fats.....	15.	—	—	—	83.0.	2.0
Beer and porter.....	91.	0.1.	—	8.7.	—	0.2

Of the six constituents mentioned in the above table the most valuable are albumen and salts. Water is useless as *food*, since it may be taken equally well as common drink. Starch is converted in the body into sugar, and part of it is then converted into fat, and the other part undergoes combustion, serving to maintain the body's heat. Fat enters into the composition of fatty tissue and fluids, and this in the system, by undergoing combustion, also serves to maintain the temperature.

The human body is continually casting off material in one form or another, and this material consists of the elements which are necessary for the maintenance of its being, but which have served their purpose in the animal economy, so that if life is to be preserved, fresh material must be supplied to replace that which is being removed. Between two and

three pounds of solid and gaseous matter and between five and six pounds of water are lost *daily* by the tissues of an ordinary man taking fair exercise, which gives 3000 lb. of matter for the year, or twenty times the weight of the individual from whom it has been cast.

The following analyses of the human tissues are taken from various authorities:

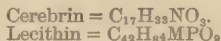
BONE.—Animal matter: A modification of protoplasm, which, when extracted from the bone by boiling, is known as gelatin—33 per cent.

Earthy matter: Chiefly calcium phosphate, carbonate and fluoride of calcium, and magnesium phosphate—67 per cent.

DENTINE OF TEETH.—Similar in composition to bone, only that the relative proportions of the animal and earthy constituents are as 72 to 28. Enamel = 97 parts of earthy to 3 of animal matter.

BLOOD. —Water	784.0
Albumen, fibrine, red corpuscles, dry fatty matters, etc	210.0
Chloride of sodium	3.6
Chloride of potassium	0.35
Tribasic phosphate of sodium	0.2
Carbonate of sodium	0.28
Sulphate of sodium	0.28
Phosphates of calcium and magnesium	0.25
Oxide and phosphate of iron	0.5

THE BRAIN AND NERVES.—Besides the ordinary constituents of the tissues, the brain and nerves, including the lesser nerve centres, contain a substance termed Protogon. This is composed of two other substances called Cerebrin and Lecithin.



Cerebral ash = 0.027 of brain, and consists of—

Free H_3PO_4 (phosphoric acid)	9.15
Potassium phosphate	55.24
Sodium phosphate	22.93
Phosphate of iron	1.23
Calcium phosphate	1.62
Magnesium phosphate	3.40
Chloride of sodium	4.74
Sulphate of potassium	1.64
Silica	0.42

MUSCLE.—This contains various albuminoids, the salts found in other tissues, and certain special compounds, as glycogen, lactic acid, etc.

For the maintenance of life, therefore, it will be necessary that the dietary contain the constituents of the human tissues. The more a food contains of the elements found in the human

body, the more nutritious is that food, provided that the article is in such a form as to be capable of being digested, and that the ingredients are in the approximate proportions required by living tissues.

A mixture of organic and inorganic, of nitrogenous and non-nitrogenous substances is essential to the perfect maintenance of health. All experience would point to the fact that a mixed diet is best for man—that is, a diet consisting of both animal and vegetable substances.

Man loses about 4,500 grains of carbon a day, and about 300 grains of nitrogen. Now, in albumen, as white of egg, carbon exists to nitrogen in the proportion of 3.5 to 1. If, therefore, a man took just so much albumen as would supply his waste of carbon, he would be compelled to receive four times more nitrogen than he required; while, on the other hand, if he ate only so much as would supply his waste of nitrogen, he would not receive sufficient carbon. Again, in bread carbon exists to nitrogen in the proportion of 30 to 1. If a man's diet, therefore, consisted of bread alone, he, in order to obtain the required amount of nitrogen, would take twice the requisite quantity of carbon.

These are merely given as examples. There is no one animal substance, as muscle, bone, fat, gelatine, etc.—there is no single fruit or vegetable which will supply all those elements which exist in the body to a sufficient, and neither a superfluous or insufficient extent.

But if a man took a mixed diet of bread and meat he would, from 2lb. of the former, obtain 4,500 grains of carbon and 150 grains of nitrogen, and from $\frac{1}{2}$ lb. of the latter, 500 grains of carbon, and 150 grains of nitrogen, which would supply all the required carbon and nitrogen with a minimum of waste.

It might at first be thought that, as the flesh of brutes has the same chemical composition as that of man, perfect health might be preserved on a diet of animal food alone; but it is not so, for an entire abstinence from all vegetable food (including, of course, fruits and grain) is productive of serious disorders, notably scurvy. The fact is not so difficult to explain as it might at first appear. Although animal and vegetable

substances contain many identical compounds which can only act in the same manner, they also contain many unlike bodies.

Now, the more *unlike* bodies are, the more readily do they act chemically on each other, and enter into fresh combinations, and a *nascent* compound—that is, one newly formed—is always in its most powerful condition. But when nothing but animal flesh is eaten, with or without a minimum of vegetable food in the form of biscuits, etc., as occasionally happens among seamen, the compounds presented for reception into the tissues are so like those already there that union takes place in a far more feeble and imperfect manner than were they dissimilar. *The attractions of the elements are already satisfied.*

In the case of carnivorous animals we can only suppose that a modification of that law exists which is found throughout the animal creation—that hereditary tendency, merging into unbroken habit, is accompanied by a physiological differentiation of the cells, by which they are accommodated to the circumstances which only can afford them maintenance. If we suppose a population of ten thousand people placed on an island without one scrap of vegetation, and that they were compelled to feed solely on the fish they managed to catch, then nine thousand of such people might die of scurvy within twelve months, and at the end of five years it is probable that one or two hundred would be living; but, if other circumstances were favorable, there would from the survivors grow up a race fully capable of maintaining their health on fish diet alone.

The case is, of course, purely hypothetical, but it is in accordance with Darwin's law of the survival of the fittest, a law which, in its relation to every-day life, is an undoubted truth.

With such a law there must be, of course, the gradually increasing modification of physiological functions to the circumstances by which the being is surrounded.

A familiar illustration of the latter is afforded in the habit of smoking. The small boy who takes his first pipe is gen-

erally sick, for the nerves of the fauces and other parts, unused to the vapor, and possibly juice, of the tobacco, are readily irritated, and vomiting results; but after two or three attempts they accommodate themselves to the new state of matters so far as to be unaffected by the tobacco. It is probable that in all these cases a chemical re-arrangement of atoms occurs in the living tissues, in order so to approximate them to the offered material that no immediate chemical union, and consequent disorganization or irritability of function, may occur. In the same manner, new materials may be added to the tissues. Thus certain savage tribes eat vast quantities of arsenic; were a white man to follow this example, he would die.

This immunity from poisoning by the substance mentioned is, of course, due to hereditary education; and to a certain extent it may, with all persons, be acquired by any individual without inheritance; thus, Dr. Garrod mentions the case of a man who took sixty grains of Smyrna opium twice a day; four grains has proved a fatal dose to some adults, and ten grains would poison the majority of persons.

The following tables are from Letheby's treatise on food, and may interest the reader:

	Grains per pound. Carbon. Nitrogen.		Grains per pound. Carbon. Nitrogen.
Split peas.....	2699....248	Cheddar cheese.....	3344....306
Oatmeal.....	2831....136	Mutton.....	1900....189
Indian meal.....	3016....120	Beef.....	1854....184
Seconds flour.....	2700....116	Fat pork.....	4113....106
Potatoes.....	760....22	Bullock's liver.....	934....204
Baker's Bread.....	1975....88	Beef and porter.....	274....1
Turnips.....	273....13	White fish.....	871....195
New milk.....	599....44	Skimmed milk.....	438....43

The following dietary would suffice to maintain in health an ordinary man, doing moderate work:

Lean meat.....	12 oz.
Bread.....	14 oz.
Potatoes.....	4 oz.
Butter or fat.....	3 oz.
Water.....	52 fluid oz.

The above may be taken as the minimum quantity of food required for a male adult; it is, of course, diagrammatic, since no two cases would *exactly* coincide. Neither is it intended

that the articles of food should be constantly given under one particular form; indeed, sameness of food, if it produce distaste, is injurious, since it hinders digestion.

A child of ten years will require half the amount of food taken by an adult woman.

Youths above the age of eighteen require about the same amount of food as adult men, supposing that they have to undergo similar exertion.

Adult women require one-tenth less the quantity of food than men leading similar lives.

The digestibility of food directly influences its value as a nutritive agent. The sooner it is digested the more valuable is it as an article of diet. If it does not digest at all, it is not merely valueless, but absolutely injurious, since its presence in the stomach calls for a secretion of gastric juice and expenditure of nerve force to effect this, and the movements of the stomach, which always take place when the interior contains any substance.

From three to four hours is the ordinary time occupied by the digestion of food in the stomach, that is, if it amounts in quantity to an ordinary meal.

The following table is taken from Dr. Beaumont's experiments on the man, Alexis St. Martin, whose stomach was laid open by a gunshot wound:

Variety of Food.	Time Occupied in Digestion.
Rice and tripe.....	1 hour.
Eggs, apples, salmon, trout, and venison.....	1½ hours.
Tapioca, barley, milk, liver, sea fish.....	2 hours.
Turkey, lamb, potatoes, pig.....	2½ hours.
Beef, mutton, and fowl.....	3 to 3½ hours.
Veal.....	Nearly 4 hours.
Animal substances are, generally speaking, more rapidly digested than vegetable.	

I will here say a word about some special varieties of food. Ripe grapes are very wholesome; they may be taken freely: they assist in maintaining regular evacuations, and they prevent acidity of the blood, besides being nutritious. Pears, apricots, peaches, apples, and oranges may be eaten without fear of any evil consequences. Plums should be taken very

moderately. Lemons, if taken by themselves, must also be used sparingly; their essential constituent is citric acid, and the best form for taking this habitually is in an effervescing draught, for the citric acid, being combined with the alkali, forms a neutral mixture which is beneficial to health. But the acid taken by itself, or in the form of simple lemon juice, or the whole lemon, having acid properties, must be used moderately. So the habitual use of lemonade, as a drink, cannot be recommended, unless an alkali be taken, either mixed with it or in some other manner. If twenty grains of bicarbonate of potash be added to every tablespoonful of pure lemon juice, the result will be a neutral compound of citrate of potash; this may be taken in the effervescing condition, or bottled when the effervescence has ceased. The draught may be so arranged as to render it either alkaline or slightly acid, if desired. One cannot with impunity habitually take large draughts of either acid or alkaline drinks without disorganizing the proper constitution of the blood.

Oatmeal is very nutritious, so is the whole wheat-meal bread; white bread is far inferior to the latter. Fish affords more sustenance than an equal weight of brute's flesh; it is rich in phosphorus, and a good nerve food. The brains of the lower animals contain the same chemical ingredients as our own, and afford a great amount of nourishment, especially to the nervous system.

Beef and mutton, when good, should on section present a marbled reddish-brown color; pinkness and moistness would indicate disease, lividity or a purple color that the brute had died without loss of blood, or had been attacked by fever. Good *slaughtered* meat should be firm and elastic to the touch, have a minimum of odor, and its surface should rapidly dry. Meat moist and flabby, or having a sickly odor, is always bad; to bring out the odor, macerate a small portion in hot water. The color of good pork should be of a very pale red tint. A dark color would indicate that the animal had suffered from trichinosis. If this be suspected, portions of the meat should be examined by the aid of a microscope, and the meat itself by means of a magnifying glass. The *Cysticercus* or measles is

enveloped in a sac often as large as a hemp seed. Good sausage meat may be known by its firmness and the absence of any disagreeable odor; in appearance it is moist and gelatinous.

Bones.—It is impossible to get all the nourishment out of a bone by merely boiling it once or twice. All bones, whatever their size or shape, have, microscopically, the same structure. Their hard tissue (in the cancellous bones, the “hard tissue” answers to the divisions of the cancelli and the outer layer of compact tissue) is traversed by certain channels called Haversian canals; from the canals minute “canaliculi” pass outwards; these converge to certain round spaces termed “lacunæ”—a certain number to each. The Haversian canals are thus surrounded by a zone of “lacunæ,” which are connected with the canal and with each other by means of “canaliculi.” The Haversian canals contain blood-vessels. The lacunæ contain little masses of living matter termed “bone cells,” and the canaliculi contain the nutriment which passes from the blood-vessels to support the bone cells. The material of the bone cells and that contained in the canaliculi form, when taken together, a great part of the substance of the bone, and they are as nutritious as marrow. But they cannot be extracted thoroughly from the bone unless it is crushed into fine pieces; it is well to grind it almost to a powder. If it be then boiled, very palatable and nutritious soup may be obtained. By boiling the bone whole, or after it had been broken into two or three pieces only, the soup would not have equalled more than half the strength, if so much, of that made from the crushed bone.

Alcoholic Liquors.—Alcohol is taken up into the brain and nervous system, and acts thus as nerve food. Consisting, as it does, however, only of carbon, hydrogen, and oxygen, it does not supply those salts which are such an essential part of the nervous apparatus, and whose excretion is correlated to expenditure of energy. From the unstable character of alcohol, the readiness with which it enters into fresh combinations, it readily fulfils the part of a violent stimulant.

But *stimulation* calls forth an expenditure of energy. This

expenditure is correlated to the exhaustion or excretion of various phosphates and complex bodies, as *neurine*, besides other substances; so that alcohol, taken by itself, calls forth a greater amount of energy than it can supply material to maintain, leaving the system not strengthened, but weaker. It must be understood that I am speaking of pure alcohol and of strong alcoholic liquors, as brandy, whiskey, and other spirits, which contain from 40 to 50 per cent of alcohol. Wines contain from 17 (Madeira and port) to 7 or 8 (light claret, hock, and similar wines) per cent; good beer and stout contain from 6 to about 8 per cent.

It must be also understood that in the whole range of medicine there is scarcely a more valuable medicine than alcohol; the thing is to know how to use it. It is veritably a nerve food, but it must be used in conjunction with those other substances which are found in the nervous system, and are necessary for its maintenance; otherwise, although affording a certain amount of material for the development of energy, it acts mainly as a stimulant.

Thus stout, beer, wines, or weak spirits and water may be taken with the meals, or as ordinary drinks at other times if the individual has a hearty appetite or is taking special medicinal foods, as cod-liver oil, etc., and is undergoing great bodily or mental exertion, or suffering from exhausting disease. But the amount of alcohol generally required by the nervous system is so small, and possessing, as the nervous centres do, the ability to form this from the carbon, oxygen, and hydrogen of other compounds presented to them, it is only in exhaustion and debility that alcohol as a dietetic has any very great value.

Taken in moderate amount in health it facilitates nervous action, acting thus as a stimulant and nerve food. It increases the heart's action, both by its conveyance to the nervous centres and the stimulation of the nerves of the stomach.

It dilates the blood-vessels of the skin, causing an increased flow of blood to the latter; hence, if alcohol be taken during exposure to cold, *the individual will lose heat by radiation*; but if the alcohol be taken when the exposure is past, it will

prevent congestion of internal organs by driving *the blood* from them.

Alcohol in large doses, or frequently repeated strong doses, acts locally on the stomach, impairing the structure and functions of the mucous membrane. In the same manner, when taken into the blood, it acts on the liver, rendering it hard and white.

Alcohol lessens the oxidizing power of the red corpuscles of the blood; in this manner it easily reduces temperature. When taken in large amounts, it causes obesity and fatty degeneration of organs. By the physiological process here involved, alcohol will maintain life for some time on an insufficient supply of food.

Drunkenness, and "death from drunkenness" are due to partial and complete paralysis of the cephalic nervous apparatus respectively: First the cortex of the cerebrum is affected, then the person feels excited, and subsequently confused, and the nerves supplying the muscles of speech are not under the complete control of the will, then the sensory ganglia are implicated, and things are seen which are not, as two moons, etc.; next the cerebellum is attacked, and the muscular sense is lost, so that the person staggers. The last part to be affected is the medulla oblongata; when this becomes paralyzed, or functionally incapacitated, owing to alcoholic poisoning, death results.

"Moderation" and "moderate amount" are in themselves very indefinite words. What for one man would be a "moderate," would for another be an excessive, amount of wine, etc. Each case has to be judged on its own merits, and the special circumstances of each must be taken into account. To continue drinking when any excitement or dizziness is felt would be an excessive or intemperate use of liquor. I am not speaking of medical cases, where teetotalers, compelled to take spirituous liquors, find themselves affected by a very small quantity, but of the circumstances of our every-day life. Strong spirits are always hurtful if taken habitually; they should never be used except as medical agents. The amount of alcoholic drink proper for a man in good health must depend

on the life he is leading; it will be greater in proportion to his expenditure of energy. For an ordinary man three pints of beer, or two pints of claret, or a pint and a quarter of port per diem will not be excessive. But, as I have intimated, no universal rule can be laid down, for some can take more than double the above quantity, and others not one-half, without being sensibly affected thereby.

Tea and coffee are nerve stimulants, but they are only slightly nutritious; cocoa is far preferable as an article of diet.

Water.—Avoid having a cistern if possible; if compelled to from the absence of a continuous supply, have the cistern lined with or made of zinc. Cisterns should be kept covered, but ventilation must be provided. The cisterns containing the water for domestic and closet use should be separate, and no communication whatever should exist between them. Cisterns should be cleaned out at least once every four weeks. All water drawn from a cistern should be filtered before being used for drinking purposes. The best filters are those made of charcoal. Rain water, when properly filtered, is as pure as any other.



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